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EDITORIAL

The present volume is a special issue on monetary policy, and in particular on deflation. It features two papers discussing general problems of the theory of monetary policy, one from a new Keynesian perspective, the other from an Austrian point of view; four papers delving into a more detailed analysis of deflation and of the theory of deflation; and finally a review essay dealing with the case for the gold standard.

This ensemble grew out of modest beginnings that had a more narrowly pedagogic objective. In the spring of 2002, Guido Zimmermann, a senior economist at Dekabank, Frankfurt am Main, asked me to co-author a paper in which we would confront the Austrian and new Keynesian views on monetary policy and to explore potential affinities and main areas of disagreement. Eventually we wrote separate papers that were presented and discussed in March 2003 at the Austrian Scholars Conference. Both papers, along with our comments, are published in the present volume.

The discussions at the ASC highlighted the characteristic Austrian habit of raising policy questions at a rather fundamental institutional level. Is there a rationale for a monetary authority at all? Do we need a central bank? Should government have any role in the production of money whatsoever? At this point, the issue of deflation comes into the picture. The fight against deflation—both against actual deflation and against the mere threat of deflation—is indeed the most commonly accepted rationale for government control of the money supply. The conviction that deflation is inherently evil is not a distinctive characteristic of the new Keynesian economists; it is a conviction shared by virtually all economists, apart from those who have learned their monetary economics from Mises, and especially from Rothbard. This raises the question whether we are here confronted with a mere political oddity that has no roots in the system of Austrian monetary theory, or with a natural outgrowth of this system. And, of course, it raises the question whether the system holds water in the important case of deflation. The papers authored by Joseph T. Salerno, Mark Thornton, and Philipp Bagus approach these questions from different perspectives and give an unequivocal answer.

Deflation is not only of great political importance. It also brings to light interesting theoretical problems that provide us with the opportunity to develop the theory of money and related areas such as business cycle theory. The works assembled in the present volume contribute to such development. Hopefully, they will inspire further research along the same lines.

GUIDO HÜLSMANN
October 2003

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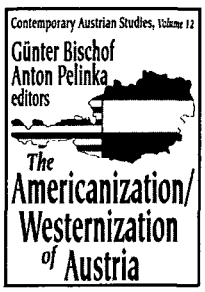

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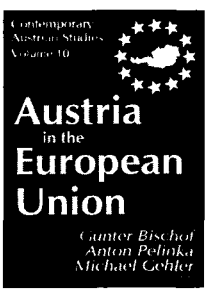

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APOPLITHORISMOSPHOBIA

MARK THORNTON

Apoplithorismosphobia (ay-pope-lit-horris-mos-foe-be-ah) is the fear of deflation.[1] Or, more correctly, the fear that an economy would "suffer" from falling prices, or a general decline in the prices of goods and services. It is a fear that has gripped some economists, journalists, and policymakers with a blinding strength as powerful as faith. Evidence seems to suggest that the phobia develops from the inability to understand the causes of the Great Depression and a more general failure to distinguish between what Bastiat called "the seen" (e.g., deflation) from "the unseen" (e.g., the causes of contraction and unemployment). Under the influence of this phobia, victims develop an unfounded faith in the ability of monetary and fiscal policy. In extreme cases it leads to the support of powerful policy "weapons" to combat deflation—the equivalent of using economic weapons of mass destruction. As shown in the case of Japan, this behavior is counterproductive and should be considered a danger to society. The purpose of this paper is to describe and diagnose this phobia and to present a treatment to counteract its effects.

The phobia seems to be largely limited to economists, journalists, and policymakers, although labor and business leaders also express similar views. Apparently it does not affect the general public, whose attitudes, views, and actions indicate that they are generally quite attracted to the idea of deflation, especially if the brisk business in places like Wal-Mart and Costco, retailers who specialize in cutting their costs and prices below their competition, is any indicator. In limited cases, members of the general public seem to even develop a fetish for the deflation phenomenon. Of course, there are many complaints about businesses like Wal-Mart and their price-cutting practices, but the complaints are largely unfounded or irrelevant, and are typically made by someone with an ax to grind (DeCoster and Edmonds 2003).

It seems odd that economists would find the idea of falling prices to be a bad thing. Likewise, it is peculiar that policymakers would fear deflation and be willing to take drastic measures to insure the so-called "defeat" of deflation. Policymakers and politicians, after all, would supposedly want the general public—their constituency—to experience the beneficial effects of falling prices over time. Lower prices create a gain of utility or satisfaction for consumers, who can either purchase more of a good or use the money saved to buy larger quantities of other goods. Deflation thus has the same effect as an increase in income.

MARK THORNTON is a senior fellow with the Mises Institute and book review editor of the *Quarterly Journal of Austrian Economics*. Suggestions and comments from Guido Hülsmann, David Laband, Robert Ekelund, and Paul Wicks were very helpful.

[1] I am grateful to Chris Motsiopoulos for his Greek translation of the word deflation.

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Even more puzzling is the fact that deflation, *per se*, is highly favorable to low-income groups and economists–despite their claims of scientific objectivity–are in general biased in favor of low-income groups and against high-income groups, capitalists, and entrepreneurs. An economy that is experiencing deflation or falling prices tends to be favorable to low-income groups because low-income individuals tend to spend a high proportion of their income on goods. Wage earners also benefit because wage rates tend to be relatively stable, increasing in real terms and thus providing greater purchasing power over time in a deflationary economy. Workers and business owners do not fear declining prices, they fear unemployment and recession, and these phenomena are not systematically related to deflation (Bordo and Redish 2003). Nonetheless, it is helpful to begin the analysis of the problem by showing that deflation is not a source of economic misery.

In Defense of Deflation

Since World War II and the rise of Keynesian economics, professional economists have understood the word deflation to mean a decrease in the index of consumer goods prices, and inflation to mean an increase in the same or similar index. Before this, the term deflation was defined as a decrease in the stock of money and inflation as an increase in the stock of money. One problem with defining deflation as the effect, i.e., price deflation, instead of the cause, i.e., monetary deflation, is that it can mislead economists from knowing the causes, effects, and proper policy approach to "deflation."

When discussing the value or purchasing power of money, we must realize that the "price" of money goes up and down for a variety of reasons related to the supply and demand for money, as well as public policy. Just as in the case of other prices, there are good reasons and bad reasons, and in the case of deflation there are four basic types of deflation, two of which are related to the demand for money and two of which are related to the supply of money.[2]

- An increase in savings, the accumulation of capital goods, and improved technology will all result in a greater production of goods, and with a given money stock will result in lower prices and a monetary unit of greater purchasing power. When nominal wages are stable, lower prices increase real wages to reflect the increase in the productivity of labor. Industries that expand productivity the most tend to accumulate the most profits. This *growth deflation* is a general pattern of industrial capitalism prior to the age of central banks and fiat money. It is also reflected today in industries that expand productivity faster than the rate of inflation, such as computers and consumer electronics. Salerno (2002a) finds this form of deflation to be entirely benign while Selgin (1997) demonstrates that it is efficient and beneficial to allow prices to fall in line with improvements in productivity.

- The demand for money could also increase for "exogenous" reasons, usually related to government policies that result in greatly reduced capital asset values, whereby individuals attempt to increase their cash balances. As money is withdrawn from circulation, the prices of goods fall, and the increased purchasing power of money allows the public to satisfy its increased "real" demand for money. This type of *cash-building*

[2]For a complete analysis see Salerno (2002a).

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deflation is a natural reaction to the outbreak of war, civil war, or natural disaster. It also occurs with the onset of recessions, higher unemployment rates, stock market crashes, or even with widespread speculation that prices will fall in the near future. This phenomenon also happened in association with the Y2K bug because people wanted physical cash in case electronic transactions were temporarily disabled. A significant increase in the demand for money not coupled with such causal events is a rare, possibly unknown event. This type of deflation can either be viewed as benign or beneficial, but it is often characterized derisively as "hoarding." The problem associated with hoarding is not with deflation *per se*, but the exogenous factor that led to it, such as war. Hoarding is actually the solution to the problem, not the problem itself. Those who deride hoarding are usually the policymakers responsible for the real problem, people who have to reduce the price of their products in the face of decreased demand, or people who are not prepared for the exogenous event by their own failure to store extra "liquidity." Unemployment is often associated with hoarding, but this unemployment is related to either exogenous factors, such as natural disasters, or is the result of labor regulations that prevent nominal wages from adjusting.[3] Hoarding can also quicken an economy's descent into recession or even deepen the recession if prices are sticky.[4]

- The type of deflation feared the most is *bank credit deflation*, which often arises when depositors perceive a threat to their money during economic downturns. If a fractional reserve bank is perceived as having made highly speculative loans or of possessing too many nonperforming loans, depositors might seek to withdraw all of their demand deposits *en masse*. This "bank run" has the effect of getting depositors the largest percentage of their deposits in as quick a fashion as possible. The remaining assets of the bank can then be sold off to satisfy some of the remaining claims of depositors, but any remaining loss to depositors represents a contraction of the overall money supply. This contraction in turn would have some deflationary impact on prices. If depositors of all banks perceive the possibility of insolvency or illiquidity, then the

[3]The economic problem long associated with hoarding is described by Mises:

> The idea that hoarded money is a barren part of the total amount of wealth increase of which causes shrinkage in that part of wealth that is devoted to production is correct only to the extent that the rise in the monetary unit's purchasing power results in the employment of additional factors of production for the mining of gold and in the transfer of gold from industrial to monetary employment. (1998, pp. 519-20)

[4]In particular see the monetary equilibrium theorists of the Austrian School such as Selgin and White (1996), Selgin (1997), Sechrest (1993), and Horwitz (2000) who do find a problem in excess demands for money not accommodated by the monetary authority and suggest that true free banking could accommodate such swings in demand. Monetary disequilibrium theorists such as Yeager (1997) also present the economic costs involved in the process of deflation. Accommodating for significant increases in the demand for money (based solely on psychological factors) might prove worthwhile, if they ever did occur, but are ineffective and possibly counterproductive when addressing excess demands based on real factors. Given the known risks of having a "monetary authority," prudence suggests that likely costs outweigh the theoretical benefits.

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attempt to withdraw deposits would result in a run on most banks, or a system-wide banking panic. In a bank panic many banks are forced into bankruptcy, there is a larger contraction of the money supply, and a significant deflation of prices. Bank panics can also temporarily disrupt the system of payments and prevent businesses from accessing capital. Given that real problems exist in the economy, e.g., recession, the bank panic is the quickest way to resolve the business errors and get the economy on the road to recovery and growth. However, the macroeconomic problems and related systemic problems of contagion can be avoided by having a completely decentralized and unregulated banking industry or a system in which banks are required by law to hold maximum reserves to cover demand deposits and any central monetary authority is not allowed to influence the money supply or interest rates. Historically, the long periods of economic depression and stagnation have occurred in the central banking era, while bank panics were somewhat frequent during the National Banking Act era and rarer during the so-called "free banking era" (1837-1860) when the majority of states passed laws that weakened their regulatory authority over banks and note issue. Apoplithorismosphobes generally believe that economies and/or their banking systems are inherently unstable.

- Another form of bank credit deflation is *confiscatory deflation* where the government steps in to prevent the bank panic from liquidating an unsound banking system during the bust phase of the boom-bust business cycle. This alternative has been used in Brazil, Ecuador, the former Soviet Union, and twice in Argentina. This approach seems to benefit the ruling elites and the owners of banks and hurts the general population of depositors, who only obtain their money after a long delay over which time its value has been greatly depreciated. In addition to the loss incurred by money owners, confiscatory deflation has negative effects on the ability of people to pay their bills, purchase goods, and to conduct their businesses. Ultimately, as in the case of Argentina, confiscatory deflation results not just in the breakdown of the economy, but of civil society, the democratic process, and the rule of law (Salerno 2002a, pp. 15-19; 2002b).

With the exception of confiscatory deflation, deflation *per se* should be viewed as an integral part of the economic process that helps the capitalist economy with destabilized money and credit systems adjust to both good phenomena, such as economic growth, and bad economic phenomena, such as war. Price deflation is an effect; it is part of the efficient workings of the market economy and the process of economic growth. Deflation is a solution to economic problems and an integral part of the process of economic recovery. The process of deflation, where the prices of goods, commodities, labor, and asset prices fall, is the process of economic recovery where labor and capital are reallocated. The fear of deflation is simply a confusion of cause and effect, whereby economists and politicians blame falling prices for the problems caused by prior increases in the quantity of money, widespread intervention in the economy, and political events such as war and revolution. Deflationary depressions are not independent events and the fact that the process of deflation can take place during some depressions and is associated with the quickening and deepening of some depressions is not an indictment of deflation, but of the original causes of those depressions and some of the wrongheaded policy cures used to address depression. Stock market bubbles don't "just happen," and to suggest otherwise, an economist is not presenting economic analysis, but his ignorance. Even at the beginning of

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the history of economic thought, Richard Cantillon (1755) showed deflation was a natural part of the economic process while economic booms and busts were the result of monetary intervention. Frédéric Bastiat (1801-1850) showed just how wrong and pernicious monetary expansion policies could be (Thornton 2002; Bastiat 2002).

Diagnosis: Doctrinal Disease

Dividing all economists into three distinct groups is a process that is fraught with error and mischaracterization and therefore no individual representatives will be singled out for identification. Nevertheless, economists will easily recognize the general characteristics of each group, which could be broadly described with labels such as Keynesian or Monetarist, and with the typical policy views you would expect to be presented in an interview, debate, or public lecture on topics such as monetary policy, deflation, or economic depression. While the phobia seems to afflict members of most schools of economic thought, the existence and severity of the disease seems to be correlated with an individual's views on monetary policy and theory. Obviously, not everyone in the schools of economic thought listed below is an apoplithorismosphobe.

By far the largest group both within and outside the economics profession could be broadly labeled as Keynesian. This diverse group includes the original Keynesians, post Keynesians, new Keynesians, Institutionalists, Historicists, Mercantilists, and various other radical and left-of-center groups. They argue, correctly, that money is a good thing. From this they then argue that money can solve many problems; that it can stimulate both employment and investment, and the stock of money can be increased, unlike physical goods, at nearly a zero cost. The monetary policy of the central bank should therefore be to keep interest rates as low and stable as possible. They think low, even zero, interest rates would reduce the propensity of people to save, thereby encouraging consumption while simultaneously stimulating investment. This group consists of people from groups such as bankers, Wall Street stockbrokers and analysts, the media, politicians, and a large percentage of the economics profession. Obviously there is a great deal of diversity of opinion within these groups in matters of methodology, theory, and policy. Nonetheless, there are hallmark characteristics that economists will recognize such as the propensity under most circumstances to advocate increasing the money supply and lowering the rate of interest.

It should be noted that this group generally places monetary policy in a subordinate role to fiscal policy. However, the fact that money loses value erratically over time while following their policies is often viewed by factions within the group as either a bad but tolerable consequence, an unimportant issue, or even a positive outcome because it increases the "velocity" of money and thereby further encourages consumer demand. One test for the phobia in this group is to present a scatter diagram of historical data on inflation and unemployment, the economics equivalent of the Rorshach inkblot test, and ask what they see in the dots. A victim of the phobia will respond "the Phillips curve." See Figure 1 for a sample scatter diagram. Members of this group can also suffer from severe apoplithorismosphobia.

The second group also generally believes in political control of money and credit and that the money supply should be increased on a regular basis. However, they believe that there should be a more scientific basis for determining how much and how fast the money stock should be increased with the goal of stabilizing the purchasing power of money. This group could be broadly labeled as the Monetarists and would include the old Chicago School, Monetarists, supply-siders, monetary disequilibrium theorists, some classical economists such as Adam Smith and Karl Marx, some mercantilists such as Alexander Hamilton, and the infamous John Law. This group normally exhibits less fear of deflation and tends to place monetary policy in supremacy over fiscal policy. They tend to suffer from an obsession with a stable value

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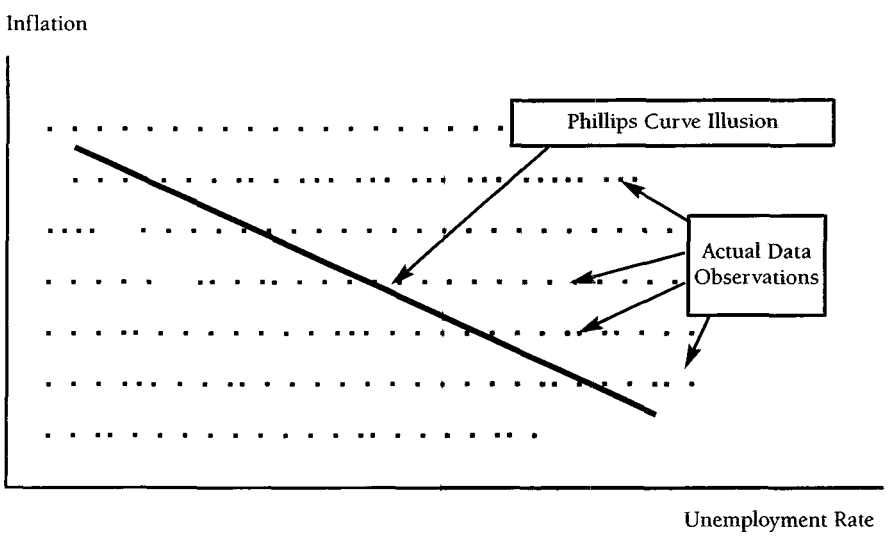
or "just price" of money. This is also a diverse group, but they could be generally characterized as advocating policy designed to achieve a single set price of money. They fear both inflation and deflation equally, but recognize that the normal course of the capitalistic economy is growth and deflation; therefore they advocate increasing the stock of money over time. Some even feel so strongly about the stability of money's value that they advocate that their policy own views be raised to the level of a Constitutional amendment.

The zeal of this group is somewhat diminished by the fact that they have established more than one mutually exclusive standard for monetary policy. One would increase the stock of money by a given percentage each year. Devotees of this standard exhibit little external fear and claim not only that the economy is stable, but that it will stabilize more when the standard is exacted, and become even more stable over time. Different rates or ranges of rates of monetary growth are advocated by members of this group depending on their estimate of the long-run average growth rate of the economy. Some members of this group would advocate a standard that calls for the inflation rate to be targeted within a low narrow range, i.e., 1-3 percent.

A second standard would maintain the purchasing power of the monetary unit (the dollar) at its current level in perpetuity by increasing the money supply by the actual growth in the economy. Some would contend that if the monetary authority overshot the target or goal, they should not be required to undershoot in the subsequent period because of the fear of deflation. The fiercest defenders of stable money will tolerate deflationary deviances in order to offset inflationary mistakes. However, these standards face intractable practical problems in that (a) there is no practical method of precisely and accurately measuring the money stock or the purchasing power of money, and (b) even if policy were to proceed with the "advanced" methods at hand, policy directors still face the problem of changing behavior on the part of money holders and banks that result in changes in the demand for money. Even if all the problems of economic reality could be solved, policy would still be dependent on political control of the money supply, the trump card that makes these internecine

Figure 1
Scatter Diagram: Unemployment and Inflation, U.S. and U.K., 1776-1999
Hypothetical Data vs. Phillips Curve Illusion



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debates superfluous. And while this group does not typically exhibit the outward signs of the phobia, and has in fact helped check the open psychosis of the Keynesians, it will, under adverse conditions (that every monetary "system" must endure), experience panic attacks similar to those experienced by the Keynesians and advocate irresponsible monetary policies.[5] While these two groups are easy to distinguish and debates between the two are well worn, in reality there is diversity within the groups and an entire spectrum of policy views. Indeed, both groups even have a shared intellectual heritage (Davis 1968; Patinkin 1969).

Even a basic understanding of the business cycle and the causes of recession would do much to combat the fear of deflation. So it is not surprising that in addition to problems in monetary theory and policy, the sufferers of apoplithorismosphobia also tend to lack a well-developed sense of what causes business cycles and asset-price bubbles. This was recently demonstrated at a conference sponsored by the World Bank and the Chicago Fed featuring some of the leading economists of the first two groups. What causes asset-price bubbles? Do they lead to deflation, and what can be done about them? These were the questions posed. Randall Kroszner of the University of Chicago and the President's Council of Economic Advisors said the uncertainty about the past makes real-time identification of bubbles problematic. "The research record on asset-price measurement is far from being sufficient to build a policymaker's confidence." The Governor of the Bank of France, Jean-Claude Trichet, said that determining asset-price bubbles was difficult and even if targeted would do more harm than good because people "may become involved in riskier projects without having consciously taken the decision to accept greater risk."

Fredrick Mishkin and Eugene White re-examined the last 100 years of stock market crashes and suggested that ignoring stock market crashes and concentrating on the economy is a better policy to follow in order to avoid severe financial meltdown, at least most of the time. Kunio Okina and Shigenori Shiratsuka found that the Bank of Japan should have used aggressive monetary policy following the Japanese bubble, but could not do so due to the fundamental and ongoing weakness of the Japanese banking and financial system. Santiago Herrera and Guillermo Perry suggested an exogenous factor played an important role in some bubbles, namely that the United States helped export bubbles to Latin American economies.

Are bubbles "rational"? John Cochrane of the University of Chicago thinks bubbles are rational in that holding shares of high-tech companies is like holding cash. Ellen McGrattan and Edward C. Prescott of the Federal Reserve Bank of Minneapolis found that there really was not a bubble in 1929 and that stocks were actually undervalued. The august Allan Meltzer of Carnegie Mellon University made the reassuring claims that bubbles could be explained, that buyers and sellers during bubbles are rational, and that "expansive economic policies can compensate for *any* deflationary impulse on output prices coming from asset prices." Werner De Bondt, however, felt that psychological factors played an important role in problems such as short-term overconfidence, lack of diversification, chasing winners, and overtrading. Michael Bordo and Antu Murshid found that bubbles are transmitted regionally during some periods and internationally during others. Franklin Allen and Douglas Gale found that international stock linkages can either increase or decrease the extent of asset

[5]In response to the problems of deflation in Japan several members of the monetarist group including Milton Friedman and Ben Bernake calmly stated that the central bank should simply print up unlimited amounts of money, that the bank threaten consumers (who are hoarding their own money) with ever-increasing levels of inflation, or that the central bank purchase worthless stocks, corporate bonds, real estate and even directly fund government expenditures. They blithely add that it (i.e., deflation) could never happen here (i.e., the U.S.).

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bubbles. Steven Kaplan of the University of Chicago found that high-tech stocks were highly valued because people felt they would reduce transactions costs, but stock market values fell when people no longer felt that way. Marvin Goodfriend of the Federal Reserve Bank of Richmond said that central banks should not target asset prices, but Michael Bussa of the Institute for International Economics said they should, sometimes. Stephen Cecchetti and Hans Genberg argued that it might help to target asset prices. There was agreement that if asset bubbles do exist, then they are inevitable, whether they are rational or not (Hunter, Kaufman, and Pomerleano 2003).

Doctrinal Defense

The final group consists of those who do not suffer much from apoplithorismosphobia. This is a very small group within the affected groups—so small in number, in fact, that one would have to go back 250 years to collect enough adherents among economists to have a decent-sized cocktail party. This group would consist of Richard Cantillon, A.R.J. Turgot, some of the physiocrats and classical economists, Frédéric Bastiat, William H. Hutt, P.R. Brahmananda, and many members of the modern Austrian School of economics. If the first group, the Keynesians, could be labeled "inflationist" and the second group, the Monetarists, could be called the "stabilizationists," then the third group could be loosely described as the Austrians, and be labeled the "deflationists."

More correctly, this group does not advocate deflation; it simply doesn't fear it. In fact, it really does not advocate any particular quantitative change in the money stock, or any particular stock of money, or any particular value of money. It generally believes that any stock of money is sufficient to serve as the medium of exchange. And even those of the group who feel that certain types of deflation need to be addressed do not seem to "fear" deflation. Most members of this group do advocate an important qualitative change in the supply of money whereby the government would no longer be involved with the supply of money, and whereby the stock of money and its value would be determined by market forces rather than by government, politics, or bureaucratic decrees. Based on the notion that people would resort, as they did resort, to commodity monies such as gold, members of this group generally believe that increases in the demand for money would tend to exceed increases in the money stock over time, just as it had done in the past. The result would be a trend toward an increasing purchasing power of money, or mild deflation of prices.

If changes in the purchasing power of money became too erratic, other than reactions to real world events such as war, natural disasters, and political revolutions, then the "market" would turn to substitute monies. For example, if the supply of or demand for animal-based money, such as cows, was too unstable due to animal diseases or the development of large-scale meat-eating festivals, the market might switch to vegetation-based monies, such as tobacco. If that money was in turn destabilized by erratic agricultural output or tobacco dropping out of common use, the market could switch to metallic money such as gold or silver. But this group believes that real shocks to the economy like crop failures and wars, as well as real shocks in the demand and supply of money, should be allowed to work themselves out in the market, without government intervention, and that these changes should be reflected in the price, value, or purchasing power of money. A free banking system could easily adjust to seasonal, secular, and technological change.

Should a large negative event, such as an invasion, be allowed to result in an increase in the value of money? Should a new technological discovery that reduces the cost of mining and processing gold be allowed to reduce the value of money significantly? Deflationists would answer yes.

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Acute Apoplithorismosphobia: The Case of Paul Krugman

Nowhere is the fear of deflation stronger than in the person of Paul Krugman, editorial writer for the *New York Times* and an economist at Princeton University. The evidence suggests that his fear of deflation is based on the association of deflation and depression, especially the Great Depression, and more recently on the case of the Japanese economy since 1990. It seems that Krugman has an unsettled view of what causes either phenomenon or the causal link between the two. He is clearly afraid of their combination, although he claims that "the only thing we have to fear is fear itself." His fear of deflation and depression leads him to advocate policies that are known to cause recessions and depressions.

Krugman firmly supports the demand-side approach of Keynesian economics where demand can falter because of psychology and Keynes's "animal spirits." There is no real cause of depressions or recessions, they just start, and "for whatever reason, the economy becomes depressed" (Krugman 2002d). He notes with Lucas (1987) that "the Great Depression had no obvious cause at all" (Krugman 2001).

Krugman observes that Japan has experienced deflation, stagnation, or low levels of inflation and economic growth for more than a decade. It seems to Krugman that deflation "turned out to be something that can happen here" and "that monsters from the 1930s were once again walking on earth." He likens this process to falling into a black hole of space, noting that:

> the economy crosses the black hole's event horizon: the point of no return, beyond which deflation feeds on itself. Prices fall in the face of excess capacity; businesses and individuals become reluctant to borrow, because falling prices raise the real burden of repayment; with spending sluggish, the economy becomes increasingly depressed, and prices fall all the faster. (Krugman 2002d)

Indeed the "threat of deflation is worse now than it was a year ago," and he notes "that by some measures deflation is already here," "that we've moved closer to the event horizon," and even that "the pull of the black hole is increasing." With images of monsters and black holes, Krugman falls into the gibber-jabber of sophomoric circular reasoning:

> If you think about this a bit, the story gets even worse. After all, prices are falling because the economy is depressed; now we've just learned that the economy is depressed because prices are falling. That sets the stage for the return of another monster we haven't seen since the 1930's, a "deflationary spiral," in which falling prices and a slumping economy feed on each other, plunging the economy into the abyss. It's pretty scary stuff, not just for Japan but for the rest of us. If Japan slides into the abyss, that will have a direct adverse effect on our economy dwarfing anything the terrorists did. (Krugman 2002d)

In this state of high anxiety, what do we do? How do we combat this depression? Normally, mainstream economists would recommend monetary and fiscal policy measures to "stimulate" the economy, such as increasing the money supply, reducing interest rates, increasing government spending, and running a government budget deficit. However, Krugman notes that these measures have all been tried and have not worked in Japan. The Japanese central bank, the Bank of Japan, has already reduced the interest rate on short-term government securities to practically zero and the Japanese government has undertaken public works and spending programs not seen since the building of the pyramids, all without any positive effect on the economy. While in a general state of dismay, Krugman can still look to the bright side and demonstrate

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his obvious taste for big government while describing the public works programs in Japan:

> Think of it as the W.P.A. on steroids. Over the past decade Japan has used enormous public works projects as a way to create jobs and pump money into the economy. The statistics are awesome. In 1996 Japan's public works spending, as a share of G.D.P., was more than four times that of the United States. Japan poured as much concrete as we did, though it has a little less than half our population and 4 percent of our land area. One Japanese worker in 10 was employed in the construction industry, far more than in other advanced countries. (Krugman 2001)

The only problem is that all this government spending did not get the Japanese economy out of stagnation, but it did prevent, according to Krugman, the economy from "sliding into a true, unambiguous depression." He laments that public works projects only provide "temporary, symptomatic economic relief" and do not provide "the basis for a permanent turnaround." Worse still, these massive public works projects have "produced nasty side effects. One is the vast environmental damage that has been inflicted in the name of job creation. Another is pervasive corruption, as rake-offs and kickbacks have become a way of life, distorting the whole economic and political system." In addition to undermining democracy and making corruption a way of life in Japan, these projects have been financed by massive government borrowing, changing Japan from a relatively fiscally prudent government to a fiscal spendthrift whose credit rating is being reduced.

> The years of deficit spending since then have pushed Japan's debt above 130 percent of GDP. That's the highest ratio among advanced nations, considerably worse than either Belgium or Italy, the traditional champions. It's almost twice the advanced-country average and 2.5 times the figure for the United States. (Krugman 2001)

Japan has tried the traditional measures of monetary and fiscal policy stimulus and has tried them in extreme fashion, and all have failed.[6]

What then can Krugman offer as a remedy? His answer is to go beyond the normal limits of government economic policy, to go where no government has gone before. He recommends the following policies for the Bank of Japan (Krugman 2001):

- Use reserves to buy "anything other" than short-term government debt, possibly corporate stocks and bonds.
- Buy long-term government securities and thereby drive down long-term interest rates.
- The Bank of Japan should print yen and use them to buy dollars, thus making Japanese exports easier to sell on world markets.
- Announce a policy of inflation targeting that guarantees the market at least 2.5 percent inflation per year.

Krugman writes that in the past these policy ideas have been considered radical, irresponsible, and beyond the traditional limits of financial prudence. However, in light of all the fear over possible deflation and depression, they "have since become respectable, almost mainstream." And that is a good thing, Krugman councils,

[6]For a proper analysis of Japan's economic problems see Herbener (1995) and Powell (2002).

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because while we are not in deflation, we must be prepared and above all, we must not be afraid to use extreme measures to snuff out deflation and depression before it gets started (Krugman 2001). "The time to fight deflation is before it has time to get built into the nation's psychology" (Krugman 2002a). For Krugman, the business cycle is a psychological problem and it requires a psychological remedy.

But here, Krugman is the patient, not the doctor. It is Krugman who is apparently suffering from an obsessive fear and it is this fear that causes him to commit illogical analysis (from a classical economics perspective), to come to irrational conclusions, and to recommend policies that will only make his fears more likely to turn into reality. In more sober moments, Krugman shows that he can fight this phobia and produce sound economic analysis and critical commentary. For example, Krugman responded forcefully and critically to Alan Greenspan's claims that he could not have known about the bubble in the stock market until after it had burst, and that even if he did know, there was nothing that the Fed could do to stop it anyway (Krugman 2002c). And in an article, "Mind the Gap," Krugman writes as if he is in therapy: "Back when I first got professionally obsessed with Japan's problems, around four years ago." His analysis is forceful and to the point: "There's no mystery about the causes of our funk: the bubble years left us with too much capacity, too much debt and a backlog of business scandal. We shouldn't have expected a quick and easy recovery, and we're not getting one" (Krugman 2002b). This clarity of thought is unfortunately rare in his writings and policy recommendations.

Babysitter Economics

Paul Krugman uses a "model" economy based on the experience of a babysitting co-op in Georgetown to describe and diagnose macroeconomic maladies (Sweeny and Sweeny 1977). Members of the co-op pay and receive one unit of script for one unit of babysitting, but Krugman claims that the co-op experienced an increase demand to hold babysitting tickets, the same thing as a deficiency of aggregate demand, and that the co-op went into recession. His solution to this "recession" is to print up more script and hand it out to members, i.e., inflation. In the real world "recession is normally a matter of the public as a whole trying to accumulate cash" and likewise Krugman declares inflation the solution (Krugman 1999). For Krugman, financial breakdowns in Latin America and Asia were simply a matter of insufficient aggregate demand.

The model is too simplistic to explain or illustrate recession, and it is near fraud to base real-world analysis on such a flimsy foundation. In the economy of the co-op there is a single, homogeneous good, babysitting, while the real world is characterized by an ever-increasing heterogeneity of goods. In the co-op economy the only input is labor, but in business cycle economics and history, things like credit, capital, investment, technology, debt, and bankruptcy are the primary issues, and even in labor-based business cycle theories, the main story is always that labor is attached or detached to capital goods. The most basic economic point is that the co-op has only one fixed price and prices are not allowed to adjust due to the bylaws of the co-op. As the authors of the original paper state, "The script-price of babysitting couldn't adjust, and the shortage worsened" (Sweeny and Sweeny 1977, p. 87). But Krugman does not even bring up the issue of prices, nor does he discuss the price adjustment that eliminates shortages and surpluses in the market economy. Likewise, in the case of the economic meltdowns in Asia and Latin America, he does not bring up the issue of what caused the problems; the unfettered free market just goes bad. In fact, in both Asia and Latin America, the economies were subjected to high, double-digit rates of monetary inflation in the years before the crisis. Like an alcoholic recovering from a

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five-year bender, Krugman is right there to suggest that another couple of cases of whiskey should get rid of that hangover and get you on the road to recovery.

The babysitter model appears in a four-page comment where the co-authors place their tongues firmly in their cheeks. There have been no citations to the four-page paper since it was published in 1977, as indexed by the Institute for Scientific Information, the most comprehensive source of citations, which reviews over 7,000 sources for citations.[7] You could say that the article was largely written and read "just for fun," and at the end of the article the authors are careful to issue a clear message of caution for the reader to not read too much into the paper, and an explicit cautionary statement to guard against the type of recommendations that Paul Krugman is so famous for making:

> Now, if goodhearted people in an area that offers little scope for chicanery can so bungle economic management (the babysitter co-op), can we really be surprised at the results of turning our economy over to the tender mercies of political experts? Indeed, unlike the co-op, the national economy seems virtually indestructible, not having died yet. (Sweeny and Sweeny 1977, p. 89)

In other words, resist the fairy tales of consultants and pundits, like Paul Krugman, who offer "economic management" of the economy as a panacea when in fact national economies are best left to their own devices.[8]

12-Step Program for Apoplithorismosphobes

In order to recover from apoplithorismosphobia it is recommended that patients follow this 12-step program:

1. Revisit and relearn the basic principles of economic analysis, such as supply and demand.
2. Remember that the cause of misallocations and unemployment is government interventions, such as price controls, inflation, and regulations.
3. Re-examine the effects of monetary policy, other than on the price level.
4. Stop thinking about the price level.
5. Pay less attention to statistics in general.
6. Forget modern macro[9] altogether.
7. Note that macroeconomic problems are usually preceeded by large increases of the money supply (i.e., inflation).
8. Remember that the Great Depression occurred after central banks were established, not before.
9. Remember the Fed's "mistakes" took place well after the Great Depression began.

[7] ISI does not index books, newspapers, and some journals.

[8] For further analysis of Krugman's book see Ritenour (2000).

[9] In recent times, macroeconomics, or the study of the overall economy, is often referred to as modern macro, presumably because it no longer contains any economics.

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10. Recall that Herbert Hoover and FDR (and modern Japan) pursued activist policy regimes to keep wages and prices high.
11. Remember that monetary and fiscal policy do not cure recessions or prevent deflation; they only exacerbate the problems and delay recovery.
12. Remember that some of the best periods of economic improvement in human history have occurred during deflations.

Economists seem doomed to repeat the mistakes of the past due in large part to the irrational fear of deflation. If they would follow the above 12-step program they could break the vicious cycle of fear and confusion and achieve clarity of economic thought.

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DEFLATION: WHEN AUSTRIANS BECOME INTERVENTIONISTS

PHILIPP BAGUS

Austrian economists are famous for the laissez-faire conclusions they derive from their theoretical analyses, in particular in the case of money. For instance, they champion free banking and free money. Yet, most of them fear deflation[1] in at least some situations and call for government intervention to prevent it. Even more mainstream economists fear deflation and want to prevent it (Keynes 1963, p. 177; Samuelson 1980, p. 258; Bernanke 2002).

This paper examines what Austrian economists think about deflation and offers a critique of their views. This seems to be of particular importance because Austrians differ in their opinions about deflation, quite in contrast to most other subjects, especially inflation. Even Rothbard and Mises diverge in their perspectives on deflation.

I will begin with an analysis of Rothbard. With a few exceptions, his understanding of deflation serves as a standard to critique other Austrian perspectives. Then I will contrast his view with Mises's, analyze Sennholz's attitude toward deflation, and continue with Huerta de Soto, who is in some sense influenced by Hayek. A critique of Hayek's perspective will follow, with the analysis ending in a discussion of Reisman's opinion on the subject.

THE AUSTRIAN ECONOMIST ON DEFLATION

Rothbard

Rothbard takes a more favorable position toward deflation than most Austrian economists and, of course, than the mainstream economists. In his analysis of deflation and price deflation Rothbard refutes three common arguments: First, falling prices would depress business. Second, a deflation induced increase in real debt would hamper production. Third, credit contraction would worsen and aggravate the depression. His refutation of these fallacies will be discussed and used later to help criticize some errors about deflation other Austrian economists hold.

Demolishing the prevailing view that falling prices would have a depressing effect on business, Rothbard asserts that

> [w]hat matters for business is not the general behavior of prices, but the price differentials between selling prices and costs (the "natural rate of

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[1]Austrian economists define deflation as a contraction of the money supply. Mainstream economists, in contrast, define deflation as a general fall in prices.

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> interest"). If wage rates, for example, fall more rapidly than product prices, this stimulates business activity and employment. (Rothbard 2000, p. 17)

Rothbard also addresses the question of the anticipation of the price drop.

He stresses that the anticipation of falling prices "lead to an immediate fall in factor prices," since entrepreneurs would simply bid down the prices of the factors of production to the anticipated levels. Rothbard adds that "partial anticipation speeds up the adjustment of the PPM [purchasing power of money] to the changed conditions" (1993, p. 697) and points out that an unanticipated price drop may not change the real rate of return due to the increase in purchasing power of the revenues. The only nominally lower revenues might be sufficient to replace the factors of production (p. 696).

Yet, Rothbard cites another argument that deflation can actually stimulate business. He states that "a sharp deflation would also help to break up the powerful aggregations of monopoly unionism" (1991, p. 67). Rothbard's prediction about unionism seems doubtful, however, because even in times of rapidly falling prices, a union would not need to dissolve. They simply could adjust their demands for a wage to reflect the downward change in prices.

Addressing the second argument against price deflation—that bankruptcies would result from an increase in real debts—Rothbard argues that a creditor of a firm is just a different type of owner:

> It has often been maintained that a failing price level injures business firms because it aggravates the burden of fixed monetary debt. However, the creditors of a firm are just as much its owners as are the equity shareholders. The equity shareholders have less equity in the business to the extent of its debts. Bond holders (long-term creditors) are just different types of owners, very much as preferred and common stock holders exercise their ownership rights differently. Creditors save money and invest it in an enterprise, just as do stockholders. Therefore, no change in price level by itself helps or hampers a business; creditor-owners and debtor-owners may simply divide their gains (or losses) in different proportions. These are mere intra-owner controversies. (2000, p. 51)

Regarding the third argument—that a credit contraction during a depression would worsen the crisis—he stresses that credit contraction actually "will have the beneficial effect of speeding up the depression-adjustment process" (Rothbard 1993, p. 864):

> For bank credit expansion, we have seen, distorts the free market by lowering price differentials (the "natural rate of interest" or going rate of profit) on the market. Credit contraction, on the other hand, distorts the free market in the reverse direction. Deflationary credit contraction's first effect is to lower the money supply in the hands of business, particularly in the higher stages of production. This reduces the demand for factors in the higher stages, lowers factor prices and incomes, and increases price differentials and the interest rate. It *spurs* the shift of factors, in short, from the higher to the lower stages. But this means that credit contraction, when it follows upon credit expansion, speeds the market's adjustment process. Credit contraction returns the economy to free-market proportions much sooner than otherwise. (Rothbard 2000, p. 18)

Moreover, he sees another beneficial effect of a credit contraction during a depression. In a depression some of the erroneously undertaken investment projects have to be liquidated, because there are not enough savings available to sustain them.

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Rothbard shows that due to a credit contraction "time preferences themselves" may decline because the falling price level leads to book losses and understatement of profits, which may induce businessmen to increase their savings (Rothbard 2000, p. 18). In the case of an increase in savings therefore, fewer adjustments are necessary.

For Rothbard, deflation, in most cases, is not an unfavorable situation, as his theoretical analysis shows. The only unfavorable deflation is compulsory monetary contraction by the government.[2] Ironically, he points out, this deflation which is "unhelpful and destructive generally receives favorable press" (Rothbard 1995a, pp. 234-40).[3]

In his analysis of deflation Rothbard takes leave from other Austrian economists. This disagreement can be pinpointed with their judgment of Great Britain's return to the prewar gold parity after the Napoleonic wars and again after World War I. In imitation of Ricardo, other Austrians condemn Great Britain's move.[4] Rothbard (1995b, p. 209), in contrast, judges that Ricardo had a "deflation phobia" and states that there is "no evidence whatever that the Bank of England deliberately contracted the money supply to pave the way for a return to gold at the prewar level" (Rothbard 1995, p. 203). The postwar depression, in his opinion, was a readjustment to the distortions brought about by the credit expansion during the war (Rothbard 1995, p. 205).

While Rothbard is less hysterical about deflation than others, he does not totally embrace it as a remedy against a previous credit expansion. Rather, he states, "the proper course for the government is to stop any inflationary credit expansion from getting under way" (2000, p. 24).[5] Whereas, he does not directly say that government should take a remedial step by inducing a credit contraction whenever a credit expansion has occurred,[6] he does, implicitly call for this contraction by stating:

> And if, as we contend, banks are inherently bankrupt [as they are after any credit expansion] and "runs" simply reveal that bankruptcy, it is beneficial for the economy for the banking system to be reformed, once and for all, by a thorough purge of the fractional-reserve banking system. Such a purge would bring home forcefully to the public the dangers of fractional-reserve banking, and, more than any academic theorizing, insure against such banking evils in the future. (Rothbard 2000, p. 21)[7]

Strangely enough, Rothbard does not apply his theoretical insights about the "beneficial effect[s]" (2000, p. 18) of deflation and about the fallacies concerning

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[2]See also on this "coercive deflation" Salerno (2003).

[3]Rothbard mentions the cases of Brazil in 1990 where the access to most bank accounts was blocked and the Soviet Union where notes were withdrawn and rendered worthless.

[4]See Hayek (1979, p. 5): "Great Britain returned to the gold standard unfortunately and unwisely at the former parity." See Huerta de Soto (2004, pp. 445-46); Mises (1953, p. 778); and Sennholz (1955, p. 15).

[5]See also Rothbard (2000, p. 28): " For it [government] has the power to reduce bank reserves at will, and thereby force the banks to cease inflating, or even to contract if necessary." Unfortunately that policy is not practical since he does not give a rule when contraction would be necessary. To make it not arbitrary he would have to say that a contraction is necessary whenever credit was expanded.

[6]"If the money supply is already inflated it is *at least* its responsibility [the government's] not to inflate *further*. Whether money should be deflated back to the gold level is a more difficult question which we need not discuss here" (Rothbard 2000, p. 148; first emphasis added).

[7]See also Rothbard (2000, p. 163): "The proper monetary policy, even after a depression is underway, is to deflate or at least to restrain from further inflation." It is not clear if that means that every credit expansion should be deflated right away. See in addition page 329.

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deflation in his plans for monetary reform. Yet, in 1962 he states that deflation, at least potentially, could play a role in a monetary reform:

> [W]e have essentially two alternative, polar routes toward 100 percent gold: either to force a deflation of the supply of dollars down to the currently valued gold stock, or to "raise the price of gold" (to lower the definition of the dollar's weight) to make the total stock of gold dollars 100 percent equal to the total supply of dollars in the society. Or we can choose some combination of the two routes. (Rothbard 1991, p. 66)

Continuing on, he states, that

> we have built deflation into an absurd ogre, and have overlooked the healthy consequences of a deflationary purgation of the malinvestments of the boom, as well as the overdue aid that fixed income groups, hit by decades of inflationary erosion, would at last obtain from a considerable fall in prices. (Rothbard 1991, p. 67)

Despite these "healthy consequences" he does not want to commit himself to this alternative way to get back to a sound monetary system and stresses that more studies in this field are necessary.

In 1983, in the *Mystery of Banking* he commits himself to the nondeflationary course and discards the plan that would involve deflation: "The old definition of the dollar as 1/35 gold ounce is outdated and irrelevant to the current world; it has been violated too many times by government to be taken seriously now" (Rothbard 1983, pp. 263-64). In contrast he has decided for the following plan: "In short, the new dollar price of gold (or the weight of the dollar), is to be defined so that there will be enough gold dollars to redeem every Federal Reserve note and demand deposit, one for one" (Rothbard 1983, p. 264). Then fractional reserve banking would be outlawed. A similar plan he expounds in the *Case Against the Fed* with the difference, that an outlawry of fractional reserve banking is not included.[8] He proudly declares that this plan (giving banks a 100 percent reserve of gold) to return to sound money would not "entail any deflation or contraction of the money supply" (Rothbard 1983, p. 265).

He acknowledges the argument that the banks should be held responsible for their fraud but stresses that with his plan "we have the advantage of starting from Point Zero, of letting bygones be bygones, and of insuring against wracking deflation that would lead to a severe recession and numerous bankruptcies" (Rothbard 1983, p. 268). Yet, since this way of getting to Point Zero would be the result of another government intervention, is that really "Point Zero?"[9] Would not the actual "Point Zero" rather be the collapse of the unsound banking system induced by abstaining from any further intervention into the banking system, especially the permission of privileges like the fractional reserve banking?

In contrast to his statement that there would be "no taxpayer bailout,"[10] his plan would entail another bailout of the banks. In fact, his plan would actually entail a great redistribution of wealth from the depositors to the banks, because in the absence of the bailout, the depositors would take over the assets of the banks. This amnesty

[8]Rothbard (1994, p. 148): "The gold stock of the Fed should be revalued upward so that gold can pay off all the Fed's liabilities–largely Federal Reserve Notes and Federal Reserve deposits, at 100 cents to the dollar."

[9]He himself argues against privileges for the banks. See Rothbard (2000, p. 21).

[10]See another outline of his plan in Rothbard (1994, p. 150).

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and bailing out of the fractional reserve banks by "letting bygones be bygones" contradicts his theory of ethics (Rothbard 1998).

Let me apply Rothbardian ethics to the case of fractional reserve banking. Rothbard himself does part of this exercise (Rothbard 1991, pp. 47-49). However, his analysis is not complete, especially when it comes to the question of punishment. He points out that fractional reserve banking is fraudulent since banks issue more money titles than they have money and promise to redeem the money substitutes on demand.[11] Fraud is "implicit theft" (Rothbard 1990, p. 51) and theft is a violation of property rights, which is a crime (Rothbard 1998, p. 60). Justice demands that the

> criminal must pay *double* the extent of theft: once, for restitution of the amount stolen, and once again for loss of what he had deprived another. . . . [F]or proportionate punishment to be levied we would also have to add *more* than double so as to compensate the victim in some way for the uncertain and fearful aspects of his particular ordeal. (Rothbard 1998, pp. 88-89)

If the banks and bank equity owners[12] would not be able to pay for that compensation, they would be forced into bankruptcy and their assets would be turned over to their customers. The bank owners would have to work for the rest of the compensation (p. 86).[13]

Another cause for punishment of the banks could be made by pointing out their relationship to the state, which is–at any rate from Rothbard's point of view–"a coercive criminal organization" (Rothbard 1998, p. 172). Fractional reserve banking and its entailed inflation help to finance the criminal activities of the state directly and indirectly. Therefore, fractional reserve banks are guilty not only of defrauding customers but also of operating in a symbiosis with a criminal organization.

Moreover it is necessary to add that in Rothbardian ethics there is nothing like a statute of limitations. Justice is not a question of time.[14] There is no arbitrary limitation of claim, which absolves a crime or a "bygone" and makes a punishment impossible. Yet, Rothbard's plan to bail out the banks is not only a prevention of justice but it entails an additional injustice, since he proposes to give to the banks gold that is the just property of other people. That is theft. It must be noted that the application of Rothbard's theory of ethics must bring about deflation by ending all fiduciary media.

Strangely enough, Rothbard does not apply his theory of ethics to his plan of monetary reform. In contrast he proposed a plan that contradicts his ethical theory and is–according to it–dead unjust.

With Rothbard's theory of ethics in mind, it is amazing that he terms the bankruptcies that would bring about a liberating deflation as "a short-lived holocaust" (1983, p. 268).[15] Surely, there would be a great redistribution of wealth with a loss for the banks, firms and households that relied on the ongoing intervention and credit expansion. The malinvestments would be liquidated and some of the sound

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[11]See Rothbard (1990, pp. 50-51): "If fraud is to be proscribed in a free society, then fractional reserve banking would have to meet the same fate." See also Rothbard (1991, p. 49).

[12]There might also be a case to punish the banks' employees, who–knowingly or not–helped the banks in committing the crime of fraud.

[13]See Rothbard (1998, p. 86): "The ideal situation, then, puts the criminal frankly into a state of *enslavement* to his victim, the criminal continuing in that condition of just slavery until he has redressed the grievance of the man he has wronged."

[14]Ibid., p. 42: "the theory must hold true for *all* men, whatever their location in time or place."

[15]But if bankruptcies (or holocaust) should be prevented, would not inflation be even better to prevent failure of debtors, like Reisman (1996, p. 961) proposes?

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investments would change ownership. Rothbard does not explain what leads him to use the negative term of holocaust for a scenario that–in the light of his own theory–should not only be ethical, but corrective of an unsound monetary system.

With great insight, Rothbard analyzes the effects of deflation, showing that it can actually have beneficial effects and that there is nothing inherently bad about deflation; yet, he does not apply his theoretical insights when it comes to his plans for monetary reform. He fails to call for deflation as a great liberating power, which seems to be the natural conclusion to be derived from his economic analysis of deflation. Rothbard does not realize that deflation is–at any rate from the viewpoint of his own ethical and economic theory–the simplest and most ethical way to get back to a sound monetary system by purging a corrupt banking system.

Mises

Mises realizes that more studies are needed concerning deflation and price deflation (Mises 1978, p. 212).[16] He defines deflation not as declining prices *per se* but as "a diminution of the quantity of money (in the broader sense), which is not offset by a corresponding diminution of the demand for money (in the broader sense) so that an increase in the objective exchange value must occur" (Mises 1981, p. 272). He himself neglects the study of deflation to some extent. Mises, usually a systematic analyst, writes in *Human Action* that "it is not necessary to point out the consequences to which a continued deflationary policy must lead. Nobody advocates such a policy" (Mises 1953 p. 428). That seems to be an easy way out of analyzing deflation.

Later on, we finally get to his views on deflation in the special case when destroyed money is "taken from the loan market" (Mises 1953, p. 564). He gives three examples of such a scenario: first a government issuing a loan and destroying the money afterward; second, that banks, frightened about their reserves and wanting to increase them by credit contraction; and third, bankruptcies of banks during the crisis and the resulting "annihilation of the fiduciary media issued by these banks."[17]

Mises points out that all three cases involve a rise in the gross market rate of interest and the liquidation of projects that do not appear to be profitable anymore. He states that "business becomes slack" and that there is a "deadlock."

There are some major problems with Mises's view. Let me first point out some general observations, before discussing the three scenarios beginning with the last.

It is true that in all three cases there might be a tendency of the gross market rate of interest to rise. Yet, that is not necessarily the case, since "[t]he mere fact that the quantity of money changes does not prevent the entrepreneurs from judging correctly what influence it will exercise on market prices. Therefore, a [decreased] quantity of money does not imply that too [high] of an interest rate be established" (Hülsmann 1998). Entrepreneurs would simply bid the market interest rate down.

Moreover, it must be pointed out that if there had been credit expansion in the first place, there could have also been an artificial reduction of the gross market rate of interest that would have needed to be corrected sooner or later. The sooner these distortions are corrected, the fewer distortions will have to be readjusted. In this case, the increase of the gross market rate of increase would speed up the readjustment.

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[16]Mises's contribution to a *Festschrift* for Arthur Spiethoff (1978, p. 212): "unfortunately, economic theory is weakest precisely where help is most needed–in analyzing the effects of declining prices."

[17]Mises tells us that this "procedure has been, in the last two hundred years, adopted again and again" (1953, p. 564). Yet, only one page later he assures us that "Deflation and credit restriction never played a noticeable role in economic history." This seems to be contradictory.

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Considering his third scenario, Mises does not point out that a bank's bankruptcy during a crisis is likely to occur, only if that bank has issued fiduciary media, i.e., committed a fraud. Would the elimination of banks that issued fiduciary media, instead of being "sources of disturbances" as he claims, not rather be an elimination of a disturbance? Furthermore, after the elimination of fraudulent banks, it becomes possible for sound banks to fill the gap created by unwise and expansionary behavior.

The same is true for his second scenario, where banks contract credit to increase their reserves. If banks, which have expanded credit become more cautious and increase their reserves, the credit expansion is partially set off. A sound bank that does not distort the structure of production has a reserve ratio of 100 percent. Increasing reserve ratios is a step in the direction of a sound monetary system and not a "source of disturbance."

The problem with Mises's first scenario, in which the government issues loans and destroys the money afterward, is not as apparent. It is necessary to make distinctions: If there was no credit expansion in the first place, there might be an artificial increase in the market rate of interest and therefore fewer investments. The structure of production might become less capital-intensive and shorter. Yet, if there was and is credit expansion by a fractional reserve system, the destruction of money through the loan market can offset or reduce the distortional effects the credit expansion has. The necessary readjustment of the structure of production will therefore be smaller in size and happen more quickly.

Mises's antideflationary attitude culminates in the assertion that "[d]eflation and credit contraction no less than inflation and credit expansion are elements disarranging the smooth course of economic activities, and sources of disturbance" (Mises 1953, p. 564). He adds that, of course, deflation in contrast to inflation does not lead to overconsumption and malinvestments and is not as likely to occur due to the deflation phobia.

There remains the question of what Mises means by "disarranging the smooth course of economic activities." Even though that is not necessarily the case, there are indeed likely to be more bankruptcies during a deflation than in its absence. Yet, he probably does not consider every bankruptcy a "disturbance," but a necessary readjustment to changed economic data. Would it not be arbitrary to claim that some bankruptcies are just necessary adjustments to changes in economic data and others are a "source of disturbances?"

Next, Mises points out that a credit contraction is not a necessary feature of crises and just an abstention from further credit expansion is sufficient to induce the crisis. Mises sees some problems with crises *per se* and states that "[t]he dearth of credit . . . hurts all enterprises—not only those which are doomed at any rate, but no less those whose business is sound and could flourish if appropriate credit were available" (Mises 1953, p. 566). It must be stressed that every business could flourish if there were enough credit available. Furthermore, it seems strange to call a business sound that would need credit from an inflationary banking system to flourish.

Adding that the crisis becomes general, Mises points out that "there is no means of avoiding these secondary consequences of the preceding boom. They are inevitable" (1953, p. 566). But why should they be avoided in the first place? Surely the readjustment will be faster this way and enterprises, which operate in harmony with the time preference rate and which did not rely on being bailed out themselves nor on the bailing out of other enterprises, can even flourish.

Mises is only partially right in that a deflationary policy does not set off "the consequences of inflation" (1981, p. 266). Surely the deflation might hurt the same people that were hurt during the inflation. Yet, deflation, in contrast to inflation, is not a "breach of the law" (ibid.); but rather, it is the restoration of the law. This is a

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restoration in the sense that it shows everyone who tried—knowingly or not—to profit from the inflationary "breach of law," that such profiteering no longer works and that a sound banking system is preferable. There is no guarantee of amnesty.

Another feature of Mises's weakly thought out theory of deflation is that he thinks a negative interest rate is possible, if there are deflationary expectations.[18] But negative interest rates are impossible if a profit-maximizing creditor is assumed. This potential creditor would hold on to his money and wait until factor prices fall to the expected level, thereby speeding about the price adjustments.

Overall, it must be said that Mises fails to see the beneficial effects of deflation,[19] i.e., the liberating power of deflation by purging unsound investment that rested on the assumption that they would be bailed out by an unsound monetary system, the partial or complete liquidation of an unsound banking system that continuously leads to business cycles, and the restriction of the welfare state that depends on inflation and the absence of deflation.

Sennholz

Hans Sennholz is a great fighter against inflation and demands that "the people must be liberated from the money monopoly, and all politicians be banned from monetary matters" (Sennholz 1987, p. 122). The early Sennholz, inspired by his teacher Mises, is deflation-phobic. He condemns the "extremely harmful policy of deflation in order to bring the pound back to par" (1955, p. 15) because the wages could not adjust downward due to union power. This is not a good argument since union power can raise wage rates above the market rate when the price level is falling and rising. Moreover, he embraces Mises's plan for monetary reform that prevents deflation (1955, pp. 296-99).

Later on, he writes that the deflation of the Great Depression was an inevitable result of the boom[20] and Sennholz is sometimes even close to praising deflation when he says that "He [the federal reserve banker] may kindle a world boom or squash it with deflation and depression" (1987b, p. 126). Since he speaks of a depression as a readjustment time, he seems to recommend squashing the boom with deflation.

Furthermore, he develops his own plan for monetary reform that consists of removing of "government from all monetary affairs" (1979, p. 149). That includes for Sennholz the abolishment of legal tender laws, as well as compulsory monopoly of the mint and the central banking system (1979, pp. 149-50). These reforms bring the advantage of a readjusting economy which was "so badly disarranged" (1979, p. 152). after the long period of inflation. Another advantage for Sennholz could be that his reforms might lead to a reduction of government spending, since the government will have lost inflation as a means to finance its spending.

Sennholz's plan for monetary reform is very likely to lead to a severe deflation, but he, unfortunately, never speaks explicitly about deflation in that context. Moreover, in his plan he does not address the privileges the government grants to banks by granting them amnesty and permitting fractional reserve banking, i.e., permission to expand credit by uncovered loans.

Overall, Sennholz does not see deflation as a liberating force *per se*, but is instead a byproduct of monetary reform. He does not address this and he fails to point out

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[18]Mises: "In the case of a quickly progressing deflation, the negative price premium could not only swallow the whole rate of originary interest, but even reverse the gross rate into a minus quantity, a rate passed on the debtor's account" (1953, p. 539).

[19]Therefore he proposes a monetary reform without deflation. See (Mises 1981, part IV).

[20]"The contraction . . . was the inevitable consequence and by-product of the financial readjustment. A depression is a readjustment time" (Sennholz 1987a, pp. 157-58).

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the role that deflation can play in the return to sound money and a sound banking system.

Huerta de Soto

In the case of Huerta de Soto, we face the problem that deflation is not clearly defined. He defines deflation as "any decrease in the quantity of money 'in circulation'" (Huerta de Soto 2004, p. 442).[21] In the next sentence he claims that "deflation consists of a drop in the money supply *or a rise in the demand for money.*"[22]

Huerta de Soto distinguishes three types of deflation "with radically different causes and consequences" (p. 443): First an increase in real cash balances. Second credit contraction during a recession and third a deliberate deflation induced by the government.

The first type of deflation he distinguishes is the increase of real cash balances, i.e., increased demand for money (p. 446), which indicates that he at this point uses his "second" definition of deflation. He acknowledges that this second type of deflation does not have to change the consumption/savings proportion but concentrates on the case where consumption is reduced to increase real cash balances. This reduction in consumption leads to an increase in investment, causing a rise in productivity and an increased purchasing power of money.

The second type of deflation that Huerta de Soto describes is the "tightening of credit which normally occurs in the crisis and recession stage that follows all credit expansion" (p. 448). In contrast to deliberate deflation, it would have positive effects by accelerating the liquidation of unsound investment projects undertaken during the credit expansion. Yet, what does Huerta de Soto mean by "deliberate"? Is it not also a deliberate action of the government if it refuses to bail out banks anymore? Is it not also deliberate if the government lifts the amnesty for banks for the fraud of issuing uncovered titles? If we have to answer in the positive, we should add that deliberate deflation can do exactly the same as Huerta de Soto's recession deflation. For the government can deliberately cause or refuse to prevent a "tightening of credit."[23]

A second positive effect of this type of deflation, according to Huerta de Soto, would be that "it somehow reverses the redistribution of income" that occurred during the credit expansion. This is not necessarily the case since it is possible that persons who benefited from the credit expansion may benefit again during the credit contraction and vice versa, since their income and wealth position might have changed.

The third positive effect of tightening credit which Huerta de Soto names is that accounting losses may lead to an increase in savings which makes fewer adjustments necessary. It should be added that when the artificial accounting losses disappear real

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[21]Yet, he admits that money is never "in circulation" and is always part of someone's cash balance. The question remains why he does not drop this misleading term. Page numbers cited are from a draft of the English translation of Huerta de Soto's *Dinero, Crédito Bancario y Ciclos Económicos.*

[22]Huerta de Soto might have gotten that addition to his definition from Mises: "Every firm is intent upon increasing its cash holdings. This may be properly called deflation" (1953, p. 566). So Mises is not firm on the definition of deflation either.

[23]Someone might even argue that every deflation is deliberate in the sense that it is caused by the government. For the very government allowance of issuing fiduciary media is a precondition of it coming into existence and being destroyed. At least there are not necessarily "radically different causes and consequences" between a credit contraction during a recession and a deliberate deflation, since deliberate deflation can be the cause of a credit contraction and a recession.

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savings might be reduced again, and adjustments in the form of a less capital-intensive and therefore shortened structure of production might take place.

Huerta de Soto's third type of deflation is conducted by a government that deliberately wants to reduce the money supply. He claims that the "whole process of deliberate deflation contributes nothing and merely subjects the economy to unnecessary pressure" (p. 445). Furthermore, this would distort the structure of production by rendering some investment projects unprofitable, which seemed to be profitable before. He also refers to two examples where such deliberate deflations occurred: after the Napoleonic wars and after World War I in Great Britain. Huerta de Soto repeats Ricardo's advice not to return to the gold standard at par.

Let us deal with these arguments in turn. First, the government can also deliberately reduce the money supply by not bailing out the banks, i.e., abstaining from further interventions into the monetary system. This liberating deflation induced by the abolition of a central bank reduces the money supply, can bring the prices back to pre-inflationary levels, purge the economy from unsound investments (Huerta de Soto's "unnecessary pressure"), and an unsound monetary system. Therefore, a deliberate deflation can contribute something, namely a sound monetary system.

It is also wrong that a deliberate deflation always distorts the structure of production. By eliminating unsound investments it rather brings the structure of production back to sound territory.

In the case of a coercive deflation by taxation and liquidating the money, there are indeed fewer investments and the structure of production becomes less capital intensive. Yet, this is not because the quantity of money is reduced as Huerta de Soto indicates (2004, p. 444). For "[t]he mere fact that the quantity of money changes does not prevent the entrepreneurs from judging correctly what influence it will exercise on market prices. Therefore, a [decreased] quantity of money does not imply that too [high] of an interest rate be established" (Hülsmann 1998, p. 4). Hence, a reduction of the quantity of money must not necessarily decrease savings/investments. The real cause for a less capital intensive structure of production, i.e., a shortened and flattened structure of production, by a coercive deflation is taxation. Hoppe shows that "by simultaneously reducing the supply of present and (expected) future goods, governmental property-rights violations not only raise time-preference rates (with given schedules) but also time-preference schedules" (Hoppe 2001, p. 14).[24] Therefore, the additional taxation or outright expropriation to liquidate the money supply will decrease savings, by raising the time preference rate. People will consume more than they would consume, if they could reap more fruits of their investments.

Furthermore, if the government gets the money it wishes to destroy not by taxation but by increasing public debt, there will be fewer loans available for private companies and a tendency for a rise in the market interest rate. Therefore fewer investment projects will be undertaken than without the increase in public debt, i.e., the structure of production will be shortened. But that does not mean that the structure of production will be shorter than it would be if it rested on consumer's savings. It could be the case that there had already been investment projects erroneously undertaken with expanded credits. In this case there are too few goods to complete all investment projects and the structure of production is artificially lengthened. In this case government intervention on the loan market corrects part or all of that distortion. It is easy to imagine the case in which the government directly offsets a credit expansion of the fractional reserve banking system by absorbing the new credits.[25]

[24]See for other distorting effects of taxation Rothbard (1977, esp. pp. 84-88).

[25]The central bank gives an uncovered loan to the government that destroys the money. In this case the transaction is only an internal governmental transfer.

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Next, Huerta de Soto deals with a general problem of deflation. Inspired by the "secondary depression" theorists Röpke and Hayek, he claims that if all attempts of liberating the labor market during the depression fail, the policy with the least disturbing effects would be an "adoption of a program of public works . . . for the actual completion of works of social value" (Huerta de Soto 2004, pp. 451-54). It must be clarified that the least disturbing effects are effects which do not disturb the market processes at all, i.e., noninterventions by the government. All taxation *and* spending by the government distort the free market.[26] The "works of social value" are just a waste in the sense of a misallocation of resources.

Furthermore, public-works income of the formerly unemployed removes not only the pressure for them to reduce their wage demands (Mises 1953, pp. 792-94) but also the pressure for them to push for a liberation of the labor market. Since Huerta de Soto stresses the difficult political situation, it should be added that it is not very probable that the public-works policy will be abandoned after the recession has ended. There remains another question: Is Huerta de Soto aware that his policy advice might be a welcome excuse for politicians to employ public works policies in times of any unemployment and when politicians do not feel like liberating the labor market?

Huerta de Soto is far from having the hysterical deflation phobia of the mainstream but he sees problems with some types of it and does not realize the liberating potential of deflation even if induced by the government. Furthermore, he unnecessarily calls for government intervention during a crisis if the labor market is inflexible.

Hayek

Hayek defines deflation as "a decrease in the quantity of money" (Hayek 1979, p. 40). Although he maintains this definition, his views about deflation continued to change quite dramatically over the course of his career. In his 1931 book, *Prices and Production*, he points out that the supply of money should be invariable in order to be neutral to the formation of prices (1967, p. 108). Two exceptions are given: An increase in the division of labor and an increase in the amount of payments (1967, pp. 121-23). This combating of price deflation is justifiable, in Hayek's opinion, because it does not distort the structure of production if the new money gets to the part of the economy where the increases have occurred.

Not only does it seem to be very difficult, in practice, to get the right amount to the right place at the right time, but also the question remains why price deflation should be prevented and why inflation in favor of some market participants is justifiable.

Furthermore, what Hayek means by "neutral" money is an entity that would bring about the same conditions as prevail in a barter economy (Hayek 1967, pp. 130-31; 1984). But money is a commodity (the most marketable) and its existence always results in another structure of production and allocation of resources that would not exist without it. Money can never be "neutral."[27] Money, in fact, enables very different conditions from that which occur in a barter economy.

Notable is Hayek's earlier attitude toward a depression. He states that monetary policy must resist proposals to fight the depression with inflation (Hayek 1967, p. 125).

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[26]See Rothbard (1977, esp. pp. 84-88 and 172-84). The disturbances of taxation would be less, if the government would not spend the tax money but destroy all of it. Therefore someone might argue that a coercive deflation tax is less disturbing than other taxes that additional distort the economy by spending.

[27]See Mises (1953, p. 250) on this point: "the notion of a neutral money is unrealizable and inconceivable in itself."

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In other words if there is a deflation during the depression, it should not be prevented. That seems to contradict his statement, that the money supply should be invariable.

In the early 1930s, Hayek in his debate with Keynes considers deflation a possible effect (secondary phenomenon) of a depression. The crisis must be cured by the readjustment of the structure of production and "it cannot be removed by new inflation" (Hayek 1995, p. 194). He correctly points out that unemployment is the result of causes that are deeper than mere deflation. "Any attempt to combat the crisis by credit expansion will, therefore, not only be merely the treatment of symptoms as causes, but may also prolong the depression by delaying the inevitable real adjustments" (1995, p. 196).

But Hayek begins to abandon his position toward deflation over the years. Already in 1939 he states that the demand for consumers' goods during a depression may fall *too low*, and therefore, "supplementing demand by public expenditure may well be justified" (Hayek 1975, p. 63). But he still does not regard monetary expansion as a wise policy, since "it could only accentuate the later difficulties" and "perpetuate fluctuations."

In 1960, in his *Constitution of Liberty* he maintains that deflation has "bad effects," but that "it is, however, rather doubtful whether, from a long-term point of view, deflation is really more harmful than inflation" (Hayek 1971, p. 330). He argues that deflation and inflation cause unexpected price changes twice. First, when the prices are (in the case of deflation) lower than expected, and second when the prices stop falling after the expectations have adapted to falling prices. This is an extremely mechanical view of the price anticipation of market participants. Surely it is imaginable that some or all market participants anticipate the price change. Moreover, he states that deflation depresses business. Hence, Hayek implicitly assumes that in some cases deflation should be prevented.[28]

He fails to see that deflation is not depressing to all businesses and does not necessarily decrease overall production. Only the business owners who depend on further inflation will get into serious trouble, while those entrepreneurs who correctly anticipate the deflation will receive gains. The ownership of companies can change but the "real rate of return remains the same" (Rothbard 1993, p. 696).

In 1975, after having received the Nobel prize he mentions the "secondary depression" in which unemployment leads to a decrease in aggregate demand and therefore more unemployment. "Such a 'secondary depression' caused by an induced deflation should of course be prevented by appropriate monetary countermeasures" (Hayek 1985, p. 210). He denies that he ever thought that the deflation during a depression would be a "curative process." He tells us that he thought deflation would be necessary to break the downward rigidity of wages and that inflation is no longer for him a politically possible measure against wage rigidities. This seems to contradict his previous statement that "appropriate monetary countermeasures" (inflation) should be used to prevent a "secondary depression."

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[28]See Hayek (1971, p. 333):

> As soon as deflation makes itself felt, there will be immediate attempts to combat it—often when it is only a local and necessary process that should not be prevented. There is more danger in untimely fears of deflation than in the possibility of our not taking necessary countermeasures.

He seems to imply that there could also be deflation that is not local and unnecessary and that therefore should be prevented.

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With public works at low wages he wants to fight unemployment and inhibit the misdirection of labor that would result from monetary expansion.[29] It is hard to see why public works do not represent a misdirection of labor and resources since the labor done is not based on consumer wishes. He furthermore argues, that in order to avert a political revolution in Germany in 1930, the government, hoping to postpone the crisis, would have had to induce a credit expansion. That does not seem logical because there is no reason why a postponed and therefore severer crisis would not have lead to a political revolution.

In other lectures that same year, Hayek makes more interesting comments about his new attitude towards deflation (Hayek 1979). There he explicitly confesses that he has changed his opinion about it. A threatening deflation must be stopped because due to the disappointment of expectations, it tends to induce a "secondary deflation," that "performs no steering function" (p. 15). Hayek states that were he responsible for monetary policy, he would prevent deflation by announcing that he would fight deflation with all means. This very announcement, he believes, would help to stave off a deflation. And he again shows his new inflationary bias by pointing out that "monetary policy must prevent wide fluctuations in the quantity of money or in the income stream" (p. 17).

Hayek does not realize that deflation in a depression speeds up the readjustment process by speeding up the liquidation of malinvestments. The business depression he talks about can accelerate it too, by making the entrepreneurs save more because they suffer book losses. The argument that there may be high real wages during a deflation might be true, but during a time of inflation, or at any time, real wages may also be too high because of privileges given to unions or direct government interventions into the labor market.

It is interesting that Hayek changed his opinion about deflation so dramatically. While he rightly said in the 1930s that monetary expansion only postpones and prolongs the depression, at the end of his career he calls for monetary counter-measures to combat a "secondary depression." Hayek gives no valid theoretical argument for his change of opinion. The reason for that radical change might have been his experience with Germany's turn to national socialism (p. 15). That led him to give excuses for all kinds of interventions.

Reisman

Reisman defines deflation as "a decrease in the quantity of money/volume of spending" (Reisman 1996, p. 520) which is in his eyes an "evil."[30] He names several symptoms of deflation besides a reduction of prices: a reduction of the "availability of funds with which to repay debts;" a "[w]iping out of business profitability due to the immediate decline in sales revenues in the face of costs that fall only with a more-or-less significant time lag;" and "[m]ass unemployment until such time as wage rates and prices fall, to correspond to the reduced quantity of money and volume of spending for goods and labor" (1996, p. 574; 2000, p. 14). How he jumps from these symptoms to the ethical judgment that deflation is evil, is not clear. But let us deal with the symptoms one after another, starting at the end.

It is true that there can be unemployment, if wage rates fall slower than other prices. But why can wage rates not fall as fast as other prices? Why can they not drop

[29]See above, for Hayek's influence on Huerta de Soto on this point.

[30]See Reisman (1996, p. 574): "To view the fall in prices brought about by increased production as the same as deflation and depression is gratuitously to confuse the enormous economic good that is constituted by increases in production with the evil that is constituted by depressions."

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even faster?[31] There is no systematic reason why Reisman's scenario should be more probable. Government interventions and union power can lead to wage rates over the market rate, when general prices fall and rise.

And is there really a "wiping out of business profitability" due to a time lag in the fall of prices? First, it must be stressed that there is not necessarily a time lag, since the price drop can be anticipated. In this case, the prices would drop immediately to the expected levels due to an abstention of buying. The "business profitability" would not be changed at all.[32]

Even if the fall in prices was not anticipated the "real rate of net return" (Rothbard 1993, p. 696) does not have to be affected, since the essential price differential (between buying and selling prices) might not change. The price differential might even rise. In this case, the entrepreneur can buy even more factors of production with his revenues than before. Surely, the entrepreneur will have suffered an opportunity loss, if he did not anticipate the price drop and did not hold to his money; but he is not forced into bankruptcy simply because of that, but only might have difficulties if he has debts.[33] This is, in fact, the next argument.

It is true that the real burden of debt is higher due to a deflation since there are fewer funds available. But why would that cause severe difficulties for the economy? It would just imply a mere change of ownership of the companies.[34] The creditors' share of the assets would rise, in some cases, so far that the creditors would take over all assets of the company. That would not change the physical integrity of the assets and the company at all. They would not just disappear. To some extent, Reisman sees that too, by pointing out that "[c]reditors gain, but not even all creditors–only those able to collect the debts owed to them" (Reisman 2000, p. 15). But creditors can always recover at least some part of their investments by receiving the assets that back the loan. Therefore, they will not be left with nothing. Depending on the judicial system, the debtors might also have to pay the debts they cannot pay when due, later.

At one point, he stresses the practical difficulties of mass bankruptcies during a deflation:

> [M]ass bankruptcies, which, given the inability of today's judicial system to keep pace even with its current case load, would probably take a decade or more to get sorted out. That would mean that in the interval the economy would be largely paralyzed, because no one would know just who owned what. (1996, p. 961)

The ability of the present-day judicial system to handle cases of mass bankruptcy is not, of course, a theoretical argument against deflation. For Reisman's argument deals with the practical difficulties a severe deflation might have to face in today's judicial system. Yet there is no theoretical reason why there could not be a judicial system that could settle the lawsuits quickly. But let us deal with this practical argument.

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[31] See Hutt (in Hazlitt 1995, p. 398): "We can conceive, that is, of prices falling rapidly, keeping pace with expectations of price changes, but never reaching zero, with full utilization of resources persisting all the way."

[32] See Rothbard (1993, p. 697): "if the changes were completely anticipated, the purchasing power would change immediately."

[33] Of course some entrepreneurs can have difficulties in the sense, that other entrepreneurs who anticipated the price drop and held their money back, can bid resources away from them. Entrepreneurs who anticipate price changes can always profit relative to the entrepreneurs who did not anticipate them. Reisman's argument was probably not intended to be an argument against any price change.

[34] See Rothbard on that argument (in 2000, p. 51 and above).

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It must be stressed that an increased demand for judicial services on the free market brings about an increased supply of those services. Yet, Reisman could contend that we face a government monopoly of judicial services. However, politicians would likely come up with emergency measures if deflation caused bankruptcies which overstrained the judicial system.[35] For politicians are eager to search and find problems they can fix. Also the judicial system itself could come up with solutions for this problem.

But let us for the sake of argument assume that the government and the judicial system would not react at all. There still remains the fact that in practice every change of ownership involves some transitional period. Would it not be arbitrary to name a time of transition that must be avoided? Let us furthermore assume that it would take "a decade or more" until the ownership of some companies has turned over and the former owner, in the mean time, would not invest or even disinvest in that particular company. In contrast, the former owner would spend his profits during the transitional "decade" on consumption or other investments. Why would that be something inherently bad from Reisman's economic point of view?

Naturally, Reisman wants to prevent deflation in his plan for a monetary reform (Reisman 1996, p. 960). Because he assumes that under a gold standard the "velocity of circulation of money" would fall, he suggests "the gold supply equal to enough dollars to leave spending in terms of dollars unchanged at the lower velocity" (p. 961) and thereby prevent a contractionary process.

What would that mean? Like Rothbard's proposal, Reisman's bail out of the unsound banking system would transfer gold to the banks (Reisman p. 961) and redistribute wealth from the cheated depositors–who should be the owner of the banks–to the actual owners of the banks.

The fraud[36] of fractional reserve banking would be sanctified *ex post*. Furthermore, it would lengthen readjustments of the structure of production that had become distorted during the inflationary period. Moreover, the proposed inflation of the money supply in terms of dollars to offset the alleged decrease in the velocity of circulation of money would be an additional redistribution in favor of all debtors.

In Reisman's opinion this redistribution would be advantageous: "Solving the problem of 'an excessive debt burden' by means of inflation in any form is a reprehensible practice" (p. 961). His suggestion for monetary reform shows that if someone wants to prevent "debt problems" for some people, there is no quasi limit in the inflation that would help the debtors. His proposed amount of inflation seems to be arbitrary by his own standards.

Reisman, however, justifies this inflation by claiming that it would be impractical and time consuming for the judicial system to sort out the bankruptcies. That argument has been addressed above, but, since he brings justice into the picture, it must be added that justice is not a question of time or practicability.

In considering the ethical part of his proposal for a monetary reform, it must be stressed that Reisman's proposal contradicts not only Rothbardian ethics but also his own version of capitalism. According to Reisman, "capitalism is characterized by laissez faire" (p. 21). Only the government has the right to violate freedom, i.e., "the absence of the initiation of physical force" (p. 22) in order to secure freedom.[37] The only task the government would have would be "upholding individual freedom. Every violation of that principle–every act of government intervention into the economic

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[35]Governments actually did that before. See for blanket measures during the German Great Depression (Hamburger 1933).

[36]Reisman himself calls it fraud. See Reisman (1996, pp. 958 and 514).

[37]This is not the place to criticize this contradiction.

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system—represents the use of physical force either to prevent individuals from acting for their self-interest or to compel them to act against their self-interest" (p. 26).

Yet, Reisman's plan of monetary reform is not the direct abolition of government interventions into the monetary system, which would bring about deflation, but it is a new intervention, guaranteeing the results of past interventions. He proposes a new government intervention into the economic system, i.e., according to his own standards, a violation of freedom, in order to bail out the unsound banking system. To conclude with his own words:

> every attempt to justify any form of restriction or limitation on freedom is actually an attempt, knowingly or unknowingly, to unleash the initiation of physical force. As such, it is an attempt to unleash the destruction of human life and property, and for this reason should be regarded as monstrously evil. (Reisman 1996, p. 27)

Conclusion

The aforementioned six Austrian economists, especially Rothbard, refute most arguments that mainstream economists mention against deflation. To differing degrees they are much less deflation-phobic than the mainstream. Nevertheless, when it comes to deflation, they diverge very much and do not staunchly champion the free market. In contrast to their laissez-faire views on most other subjects, in order to fight deflation, they come up with an arsenal of state interventions, like government bailouts, redistribution of gold, amnesty and privileges for the banking system, government-planned monetary reforms, public works, credit expansion, and inflation.

Curiously, with these interventions they want to prevent the liberating deflation, i.e., the free market reaction to an abstention of all government interventions into the monetary system, especially the fractional reserve banks' privileges and amnesty. They fail to see that deflation is a fast, smooth, direct, and ethical way to a sound financial system.

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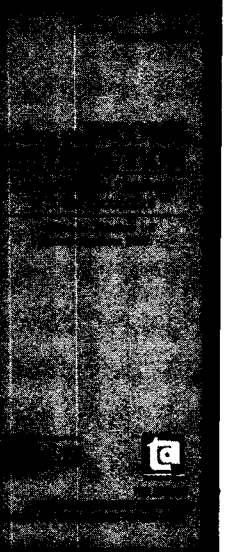

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Optimal Monetary Policy

Jörg Guido Hülsmann

Ends and Means of Monetary Policy

Mainstream writings on monetary policy typically focus on the goals that are assumed to be the goals of monetary policy makers. Inflation targeting, employment, equilibration of the balance of payments, growth targets for monetary aggregates, the stabilization of exchange rates, GDP, or asset prices—these and similar goals for monetary policy are discussed in more or less detail in present-day textbooks. When it comes to the *means* by which these ends are to be reached, the discussion stops altogether and gives way to a description of the technicalities of open market policies, discount rates, reserve requirements, and so on.

In the present article, we will neglect these technicalities of monetary policy and focus on ultimate means and ends. The rationale for this procedure is twofold.

On the one hand, ends such as inflation targeting and growth rates of monetary aggregates are not ultimate, but intermediate ends. The tacit understanding is that they are more or less closely related to the attainment of the ultimate end—the reduction of scarcity (increase of "prosperity" or "wealth"). Our approach allows us to sidestep the discussion of the validity of this tacit understanding. We will directly address the more fundamental question to what extent monetary policy can and does affect the wealth of the community of money users at all.

On the other hand, the focus on ultimate means allows us to study monetary policy from a far more general point of view than is usually done. In particular, it allows us to interpret the institutional framework of money production as one of the means of monetary policy, and to compare different institutional set-ups. Our approach takes it for granted that central banks, the IMF, the World Bank, and other national and international monetary organizations are not ultimate givens, but creatures of the human will. They are *means* of monetary policy in the fundamental sense in which we understand this word. And as mere means to an end, rather than ends in themselves, they can be compared to other institutional arrangements that are supposed to attain the same ultimate end of reducing scarcity.

Accordingly, we will first study money production on an unhampered market. Then we will turn to the question whether politically induced changes in the money supply are suitable to bring about a *further* reduction of scarcity as compared with the free market. We will conclude that this is not the case. Quite the contrary, such changes actually *aggravate* the situation. Therefore the only logical alternative of politically induced changes in the money supply, namely, *laissez-faire*, is the optimal monetary policy.

Jörg Guido Hülsmann is a senior fellow of the Mises Institute. A previous version of this paper was presented in March 2003 at the Austrian Scholars Conference. He is grateful for comments from Dan Mahoney, Per Hansen, Atilla Antero, and Nikolay Gertchev.

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It might be objected from the very outset that this approach cannot possibly warrant the conclusion it is supposed to yield, because the focus on the production of money is far too narrow to do justice to the complex issues involved in monetary policymaking. But this objection would miss the mark. The production of money is the essential means of monetary policy, even if we understand monetary policy in the conventional sense of "decision-making by monetary authorities." Nobody contests the importance of the money supply for monetary policy in this sense. Admittedly it can be a tricky task to define monetary aggregates that are most relevant from a political point of view. But this does not alter the fact that manipulating the money supply is the main vehicle of conventional monetary policy. Indeed, *quite irrespective of the goals of monetary policy, there are only two types of means available to the policy maker.*

The first type of means is monetary interventionism—in particular, price controls in the form of domestic price caps or of foreign exchange controls. It is well-known that these means are abortive. Just as price controls in any other market, they do not solve the problem they purport to solve, but merely stifle the market process and the ability of the members of society to adapt to changing circumstances (Mises 1998, chaps. 30-31; Rothbard 1993, chap. 12). We therefore do not have to deal with them now.

The second type of means consists in changing the money supply. This is most obviously the case when the policy of the monetary authority consists in targeting a certain money aggregate (money supply growth rules). But it is also the case when the authority targets a certain inflation rate, or a certain interest rate, and so on. The simple but important truth is that, whenever monetary policy does not command the other market participants to behave in a certain way (interventionism), it has no other means but to change the money supply.[1] In short, *noninterventionist monetary policy in all cases boils down to changing the money supply.* The main reason why this fact is usually not perceived with the necessary clarity is the somewhat exaggerated emphasis that professional monetary economists place on discussing the various possible ends of monetary policy, as well as the various techniques used to change the money supply (open market operations, bank reserve requirements, discount policy, and so on).

Our focus on the production of money is therefore hardly inappropriate to answer the question whether *laissez-faire* is the best monetary policy. Notice that the present study differs from previous works not only through its focus on the production of money. We also take the case of money competition—parallel production and use of several monies—to be the rule rather than an exception on the free market.[2] This approach will prove to be very useful in analyzing "hard cases" such as deflation and the flight from money.

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[1]We use the term "interventionism" in the narrow sense in which Ludwig von Mises (1977, p. 20) has used it. Murray Rothbard used the term in a larger sense, which includes the government production of money. See for example Rothbard (1977).

[2]In this way we go beyond our own previous study on money competition, in which we had espoused the conventional approach of first analyzing the use of only one kind of money—monopoly money, or "standard" money as it is commonly called—and only in a second step introduced the use of other monies (Hülsmann 1996). In the light of the present study it will appear that the conventional approach makes a comparatively weak case for monetary laissez-faire. Notice that, while other studies of Austrian inspiration (White, Dowd, Selgin, and others) also purported to deal with "currency competition," these works did not deal with our present subject, the production of *money*, but with the production of money substitutes. On the important differences between money and any substitution, see Mises (1980, pp. 63ff.).

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The Production of Money on the Free Market

In order to put our analysis into proper perspective, it is useful to first study the main characteristics of unhampered money production. The unhampered market economy is defined by the absence of legal restrictions that prevent the citizens from using their property to produce money or money substitutes. On a free market, each market participant freely chooses to enter, or not to enter, the money production business. Everybody may try to mint and coin precious metals, and everybody may try to produce and offer other things for employment in indirect exchange.

The production of commodity money such as gold is then determined by the same facts that constrain the production of any other good. Gold money will be produced to the extent that this production yields a sufficient return, that is, to the extent that there is a sufficient spread between the quantity of product (in ounces of gold) and the quantity of gold expenditure (in ounces of gold) on the factors of production, in particular, on labor services. Now this spread is in turn determined by the demand for all other goods. Suppose that consumers spend more money on shoes and that there is therefore an incentive to increase the production of shoes. The shoe producer can increase production only if he bids labor and other factors of production away from other businesses, such as the production of gold coins. The shoe producer can offer higher prices for these factors because his selling receipts increase, and as a consequence the other firms will have to cut back production.

In short, on a free market the production of money is constrained within the limits set through voluntary cooperation between the members of society. No other considerations come into play. In particular, for purely technical reasons there is no such thing as monetary policy in the conventional sense. The quantity of paper money can be profitably increased at the whim of its producer, because he produces at virtually zero cost. By contrast, increasing the quantity of commodity money entails significant costs and is therefore much more limited. Additional quantities will be produced only if consumers can be expected to patronize this increase more than increased quantities of the other goods that could also be produced with the same factors of production.

Although on a free market, any person could try to produce paper money, there are compelling reasons to assume that the production of money on a free market would in practice boil down to the mining and coining of precious metals, the physical characteristics of which make them more suitable as media of exchange than all other commodities. Theoretical analysis and historical experience both tell us that this will be the case. Paper money is unsuited to withstand the competition of the precious metals. The essential reason for its inferiority is that it does not attract a nonmonetary demand (Hülsmann 1996, pp. 293–99, 307; 2000, pp. 428–30).

Currency competition on a free market would thus be confined to the competition between precious metals. Here the relative scarcities of the various known metals play an important role in conjunction with certain technological constraints. Suppose that the entire economy uses gold coins for its monetary exchanges, and that silver and copper are used only for ornamental purposes. Now suppose further that the economy grows and that as a consequence the purchasing power of gold constantly increases. There will come a point at which it is no longer convenient to produce and use gold coins that are sufficiently small to be used as payment in small transactions, such as paying for a cup of coffee or for a hair cut.

One solution to overcome this difficulty is the use of gold substitutes, such as tokens. We can for example imagine that a firm issues paper notes, or coins made out of plate, or some other type of signs made out of cheap material, to represent very small quantities of gold—too small to be handled in the form of gold coins. The issuer holds the corresponding quantities of gold, and he will surrender gold upon presentation of

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those tokens once a sufficiently great number of them are presented for redemption. Such systems have proven their expediency in many historical cases, for example, in U.S. mining towns in the nineteenth and twentieth century. Still the use of token money is expedient only within fairly narrow limits, because of two disadvantages: it invites counterfeiting, both by the issuer himself and by other people, and it entails the additional costs of token production.

Another solution is to use a different metal, the purchasing power per weight unit of which makes it expedient to use coins made out of this metal for buying and selling those goods that can no longer be conveniently exchanged for gold. Let us therefore assume that some market participants start using silver coins in small transactions, and that other market participants imitate this successful behavior. As a consequence, our economy would use two monies–gold and silver–that freely circulate in parallel and overlapping networks. At least at the beginning, the gold network would probably be much larger, and silver coins would be used only in those less frequent cases in which neither gold tokens nor gold coins would be convenient.

If economic growth continues, the substitution process would replicate itself, both in the higher and in the lower echelon of money prices. Thus, at one point silver too might have such a high purchasing power that small transactions could no longer be made in silver coins. The market participants then might decide to use copper coins for these small transactions, thus layering a network of copper exchanges over the already existing networks of gold and silver exchanges. Meanwhile, gold coins could have such a high purchasing power that they might be unsuitable for most daily transactions. In this case, silver coins will replace them as the most widely circulating medium of exchange; the gold coins would be used only in transactions involving very expensive goods; and copper coins would be used predominantly in transactions involving goods of a very small value.

This is how the growth and decline of the economy determine the competition between different monies. And a similar role accrues of course to the production of additional quantities of these monies. On the one hand, in our above example, the production of additional quantities of gold would delay the substitution process, and so would the production of additional quantities of silver and copper. On the other hand, the production of additional quantities might reach such an extent that the metal would be unsuitable to be used in indirect exchanges. If gold were as common as iron, so that a wagonload would be needed to pay for a suit, it would not be used as a medium of exchange. Long before this happens, some other precious metal would replace it.

But however many currencies would be used on a free market, in any case the production of each of them would be narrowly circumscribed, as we have said, within the limits given through consumer preferences. The production of money, and the use of money, would be subject to the very same laws that apply to the production and use of all other goods. On a free market, consumers are the ultimate arbiters of all investment decisions. By buying and by abstaining from buying, they determine the profitability of each line of production. Capitalists would therefore *produce* any kind of money up to the point at which they expect it to no longer be profitable, and then invest all further resources into the production of other goods. And people would *use* any kind of money–that is, own it–so as to maximize the subjective value of their portfolios. If they found they owned too much gold, they would sell the superfluous gold for other things that for them have a higher value (for example, they would sell it for other kinds of money, or for other "real" goods and services). Thus the use of money follows the same principle that governs the use of all other goods: we only own it to the extent that it does not prevent us from owning other goods that for us are more important.

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THE NONUTILITARIAN CASE FOR MONETARY *LAISSEZ-FAIRE*

So far we have described how money would be produced on a free market. We were only concerned with the purely factual description of how the system works. In particular, we left out all questions pertaining to the political evaluation of its workings, that is, to the question of whether monetary *laissez-faire* is a good or a bad thing. To this question we now turn. In the present section, we will briefly deal with the nonutilitarian case for laissez-faire in the production of money. The remainder of our study will then take on the utilitarian considerations that here come into play.

The first thing to notice is that the political evaluation of monetary order must be cast in terms of alternatives. It would for example be pointless to argue that monetary laissez-faire was deficient from some absolute point of view, if we lacked a better alternative system that we could put in its place. The relevant consideration is how the free-market production of money *compares* to other monetary regimes.

A second preliminary observation concerns the choice of the standard of comparison. What should be the *criterion* in the light of which the comparison should be made? More importantly, *who* should decide what the criterion should be? The usual approach is to take the judgments of the members of society as an ultimate arbiter. But if we follow this approach, we very quickly reach insurmountable limits because of the ubiquity of conflicts of interest. For example, it is one thing to state that the production of additional quantities of gold delays the substitution of gold by silver. It is quite a different thing to conclude that the production of additional quantities of gold is a good thing. We might grant that the present users of gold coins are interested in maintaining a large network of gold exchanges. But they are *also* interested in maintaining the purchasing power of their present cash balances, and further gold production would reduce this purchasing power below the level it would otherwise have reached. Moreover, one must not ignore the silver producers and silver coin users. These people could be said to have an interest in a more limited production of gold, because in a growing economy this would speed up the substitution of silver for gold, thus enlarging the network of silver exchanges and increasing the purchasing power of their present cash holdings.

Economic science cannot settle the conflicts of interest between these different individuals and groups. There is no common denominator of all individual interests that would allow us to make judgments about aggregate welfare, to the effect that, for example, it would be better to have a larger rather than a smaller quantity of gold or silver or any other medium of exchange. The fundamental problem of trying to make economic reasoning the arbiter in such conflicts is that we would have to weigh and add and subtract individual values. But this approach has no scientific basis at all.

Many Austrians therefore adopt a different approach to tackle policy questions in a context of conflicting interests. They hold that the only defendable welfare criterion is the respect of property rights, because this criterion alone can be justified without self-contradiction.[3] If we apply this criterion to the production of money, then the number of monies spontaneously chosen by the market participants, whatever this number may be, is the optimal number, because the market economy is *defined* as the

[3]See Hoppe (1989, 1987). See also Rothbard (1998, 1997). Rothbard's early work on welfare economics followed a different approach, arguing that the market process is inherently optimal because all parties engaged in exchanges "demonstrate," by the very fact that they exchange, their preferences. See Rothbard (1956). But this argument does not hold water because Rothbard merely assumes that only the use of one's property "counts" in demonstrating one's preferences. The point is to prove the pertinence of this assumption; it cannot be simply taken for granted.

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totality of social interaction premised on the respect of private property rights. For the same reason, whatever the quantity produced of any of these monies in a free market is the optimal quantity.

The optimality of monetary *laissez-faire* in the above sense must not be confused with the question whether individuals can produce or hold too much, or not enough, money. Market participants can err and do err when using money, just as they commit errors when using any other good. Notice however that each market participant has strong incentives to avoid error and to produce and use the optimal number of monies. These incentives are lacking when money production is under political control.[4]

The Utilitarian Case For Monetary *Laissez-Faire*

What we have said so far coincides with the conclusions reached in the best treatises on monetary economics, which approach our problem from a utilitarian perspective. Economists from David Hume onward have emphasized that the quantity of money is irrelevant for the wealth of a nation. It is true, however, that Hume and most other economists have defended this proposition with all sorts of qualifications. Only a handful of economists including John Wheatley, Ludwig von Mises (in his mature works) and Murray Rothbard have defended it categorically and consistently.[5] Says Mises: "The quantity of money available in the whole economy is always sufficient to secure for everybody all that money does and can do (Mises 1998, p. 418)."[6] Even more so than Mises, Rothbard recognized the central importance of this point, which made it in fact an axiom of the theory of money. In Rothbard's words: "One of the most important economic laws, therefore, is: *Every supply of money is always utilized to its maximum extent, and hence no social utility can be conferred by increasing the supply of money*" (Rothbard 1993, p. 671; 1990, p. 34; 1983, p. 45). In Rothbard's eyes, the free-market production of money conveyed no *monetary* benefits, but it served the non-monetary demand for the metals used as money. Therefore, he concluded, the free-market production of commodity money was always optimal.[7]

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[4]For a general discussion of the comparatively superior ability of the market process to bring *ex ante* plans in line with *ex post* realities, see Rothbard (1977, chap. 2).

[5]See Wheatley (1807, chaps. II and III, esp. pp. 35-48). The first chapter of this neglected book contains a brilliant critique of the monetary thought of David Hume, Adam Smith, and James Steuart. For an overview of some of the fallacious monetary arguments that plagued classical economic thought, see Gertchev in the present issue. Today the fundamental insight that the nominal size of the money supply is irrelevant for aggregate wealth lives on in the tradition inspired by Mises. See, for example, Salin (1990, 1991), Reisman (1996), and Huerta de Soto (1998)

[6]In his *Theory of Money and Credit*, Mises had taken certain exceptions to the principle that the money supply is irrelevant. Thus he argued that decreases of the price level were likely to entail "convulsions" (1980, p. 359) and unnecessary production of commodity money (p. 333). He also argued that fiduciary media could spur the accumulation of capital (p. 388).

[7]Rothbard (1990) says:

> We conclude, therefore, that determining the supply of money, like all other goods, is best left to the free market. Aside from the general moral and economic advantages of freedom over coercion, no dictated quantity of money will do the work better, and the free market will set the production of gold in accordance with its relative ability to satisfy the needs of consumers, as compared with all other productive goods. (pp. 34-35)

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We have seen that this argumentation is slightly incorrect because technological constraints (convenient coin size) determine currency competition too. But to the extent that we may abstract from these physical constraints, the Rothbardian position is unassailable. A higher money supply goes in hand with higher money prices, whereas a lower quantity goes in hand with lower prices. But the level of money prices has absolutely no impact on aggregate production. At a higher level, entrepreneurs enjoy higher selling prices, but their buying prices are higher too. And similarly, at a lower level of money prices, both selling *and* buying prices are low and therefore do not affect the economic success of production.[8] Increases and decreases of the quantity of money do affect the wealth position of individuals and groups relative to one another. But they do not cause an increase of aggregate wealth and of aggregate production beyond the level it would otherwise have reached.

Hence, if we disregard the technological constraints of coin production, changes in the quantity of money do not *alleviate* scarcity within society. And neither do such changes *aggravate* scarcity. To facilitate monetary exchange, there is no reason to prefer any one money supply to another. A constant money supply is not superior, nor inferior to an increasing or to a decreasing money supply.[9]

And if we do take account of the technological constraints of coin production, as we have done above, the conclusion remains the same. To facilitate indirect exchange, it is not necessary to violate the property rights of the market participants through legal tender laws and other institutions, in order to produce a different quantity of money from the one that would have been produced on the free market. Any such policy does not facilitate indirect exchange. At the very best, it boosts the use of one type of money at the expense of other types of money. And it always entails a distribution of resources that differs from the one that would have resulted from the voluntary interaction of the members of society.

To sum up, money production is subject to the same constraints as all other branches of production, constraints that ultimately spring from the value scales of the individual market participants, who consent or do not consent to cooperate. From this point of view, the free market production of money is inherently optimal, irrespective of the number of monies and of their relative quantities. The relevant question is therefore not: *How much* money should be produced? The question is: Are there any legal restrictions that hamper the competitive production of money? And as stated above, there seems to be no economic reason for the establishment or maintenance of such restrictions. Any number of monies spontaneously chosen by the market participants is, at any rate from an *ex ante* point of view, the optimal number, and any quantity produced of any of these monies in a free market is the optimal quantity.

Let us now examine the utilitarian considerations that are typically brought forward against monetary laissez-faire. The problem we have to deal with boils down to the following question: Are there any benefits to be derived from a political manipulation of the production of money? In other words: To what extent could it be expedient to violate individual property rights, in order to bring about changes in the

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[8]Jean-Baptiste Say has illustrated this point with a famous mental experiment that still serves its pedagogical purpose: Imagine two market economies that are exactly alike, with the sole exception of the quantity of money that is being used. And assume that economy *A* uses twice as much money as economy *B*. In this case, Say argued, the money prices in *A* will be exactly twice as high as the money prices in *B*. Now, the point is that this does not affect the wealth of the nation, and it does not even affect the relative economic status of each individual. Whether we have more money or less is ultimately irrelevant (Say 1841, p. 248). See also Wheatley (1807, p. 37).

[9]For a refutation of the view that increases in the money supply, *per se*, entail business cycles, see Hülsmann (1998).

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money supply that differ from those that would have been obtained on a free market? If we find that such infringements of property rights merely benefit one group of individuals at the expense of other individuals or groups, we will have to deny any overall benefits. Such benefits could be said to exist only if politically induced changes in the money supply do in fact reduce scarcity.[10]

Space limitations compel us to deal only with the main arguments leveled against our tenet that all quantities of money produced in a free-market context are equally optimal. We will first examine the question whether politically induced changes in the quantity of money do have any *direct* benefits, and then turn to their alleged *indirect* benefits.

Does printing more paper money reduce, by itself, the scarcity of resources? To raise the question is to answer it. Printing more paper tickets does not make us richer than we otherwise would be, because our welfare does not depend on the quantity of money we use, but on the quantities of real goods that can be purchased with this money. The simple fact is that *printing money is not identical with producing goods that can be purchased with this money.* Additional money does not make the nation of money users better off than it would otherwise have been. If it were otherwise, we would long since have reached Nirvana. The incontestable fact is that printing more paper money *is not* the same thing as producing more of the nonmonetary goods that are offered in exchange for money. It follows that the production of money is in any case not a *direct* cause of those other goods.

Thus the only question is whether there are any *indirect* causal relationships between these two magnitudes. The remainder of our study will examine this question in some detail. Let us notice from the outset that the utilitarian rationale for monetary policy ultimately hinges on an affirmative answer to it. If changes of the money supply cannot even indirectly be of any benefit for society, then there is no use for monetary policy at all, and we would do well getting rid of the institutions in charge of monetary policy as quickly as possible.

Before we proceed, let us, only for the sake of completeness, raise the question of whether monetary policy could be justified in terms of purely *accidental* causal relationships. The answer to this question is patent. If changes of the money supply brought about positive consequences by mere accident, so that negative consequences were as likely to follow from the policy of changing the money supply, it would be meaningless to speak of monetary policy at all, and central banks and other authorities in charge of it should be abolished at once.

THE BENEFICIAL-DISTRIBUTION FALLACY

Our analysis of money production on a free market led us to the conclusion that any quantity of money that comes into existence without infringement of other people's property rights is the optimal quantity under given circumstances. Now let us hasten to point out that this statement must not be confused with the claim that free-market money would be optimal in the sense of being somehow "neutral" with regard to the market process. Changes in the money supply always and everywhere have a permanent impact on the real economy, irrespective of whether those changes result from the market process itself or are politically induced.

In short, changes in the money supply have a real impact, both in the short run *and* in the long run, and this impact exists quite independent of whether the market

[10]Historically, the most important institutions designed to induce political changes of the money supply were (1) paper money (protected by legal tender laws and other monopolistic charters) and (2) fraudulent fractional reserve banking (protected by chartered central banks, legalized suspensions of payments, and paper money).

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participants are smart enough to anticipate the ongoing changes in the quantity of money. This is so because changes of the money supply modify the *distribution* of wealth within society.[11] An increase of the quantity of money benefits the individuals who receive the new money units first, because their monetary income increases relative to that of their fellow citizens. In their capacity as consumers and entrepreneurs, they can now bid away consumers' goods and factors of production from other members of society. Those who are last in line in this process are impoverished relative to the wealth they would have had without the increase of the quantity of money. And similarly, a decrease of the quantity of money harms those who first suffer from this decrease, because their monetary income diminishes relative to that of the other market participants.[12]

Now it is conceivable that the money-induced redistribution process will turn out to benefit the best entrepreneurs of the nation. This possibility has been stressed in the doctrine of forced savings.[13] If the redistribution works out to the advantage of those who are best at investing the available resources, then their decisions will have greater weight than they otherwise would have had. Inversely, the decisions of all other people, who are comparatively poor investors, would have less weight than otherwise. Thus the increase of the money supply has a positive net impact.

However, there is no such thing as a mechanism according to which a money-induced redistribution process automatically benefits the best entrepreneurs. There is no reason why an increase of the money supply, as such, should not entail exactly the opposite result, namely, benefiting the less competent at the expense of the more competent entrepreneurs. Inflation-induced forced savings are therefore nothing but a pleasant accident of history. It is a fallacy to elevate the merely accidental connection between inflation and increased production into a principle of monetary policy. The distribution effects of money alleviate scarcity only accidentally.

If anything, we have good reasons to assume that the money-induced redistribution process would usually benefit the less competent at the expense of the more competent entrepreneurs. This is so especially when the production of money is under political control, such as in a central banking system. There is an overwhelming incentive for paper money producers to finance the welfare state and the warfare state with the printing press. After all, it owes its monopoly privileges to the very state that calls on it in times of financial distress. Similarly, which entrepreneurs are more likely to depend on a paper money producer to finance their ventures–competent or incompetent entrepreneurs? The answer seems to be obvious. For highly profitable firms it is

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[11]Notice that this is a common feature of all changes in society. Any change in the quantity of any good affects the relative wealth positions of all individual market participants. The man who produces and sells new chairs thereby increases his money income relative to the money incomes of all other market participants. The payments he receives are deflected from the payments other market participants could have received for their products. The latter are now forced to sell at lower prices than they otherwise could have realized, that is, which they could have realized in the absence of the new chair production.

[12]The first economist to stress these distributive issues related to changes in the money supply was Richard Cantillon (2001). Subsequent authors such as David Hume, J.S. Mill, and J.E. Cairnes noticed that new quantities of money spread throughout the economy in a time-consuming process, but they tended to downplay or ignore the permanent changes induced by this process. In their view, changes in the quantity of money had no long-run real effects. It was Ludwig von Mises (1912, pp. 222ff.) who rediscovered Cantillon's important insight.

[13]Advocates of the doctrine were, among many others, Mises (in the *Theory of Money and Credit*, not in *Human Action*), Josef Schumpeter, and Friedrich A. Hayek. For the history of this doctrine, see Hayek (1939). Mises (1998, pp. 548f.) seems to use the term in a slightly different meaning.

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easy to attract sufficient support from capitalists. Only firms operating at a loss, or ventures that offer a very unlikely promise of future profits, truly need redistribution in their favor through the printing press. Hence, there are compelling reasons to believe that the political control of the money supply will tend to benefit the incompetent rather than the competent members of the nation.

The Motivation Fallacy

According to this argument, market participants will work more and/or harder when motivated through rising selling prices. Because paper money producers can very easily bring about such an increase by printing more money tickets, they can stimulate aggregate production. This holds true at least in the short run, that is, in the period during which the additional money spreads through the economy. Luminaries such as David Hume (1985, pp. 286f.) have endorsed this argument. But it is liable to fundamental objections.

In virtually all cases, the additional money is first sold to only a part of the market participants. We may grant that these people will be enthusiastic to obtain higher prices for the goods they sell, and thus set out to produce even more. They buy more factors of production and produce greater quantities than before. However, this comes necessarily at the expense of other entrepreneurs, who can no longer compete with the former on the factor markets and who will therefore produce less and who will—on equal psychological grounds—be discouraged. In short, the additional money would destroy as much motivation and labor on the one hand, as it would entail on the other hand.

Assume now for the sake of argument that all market participants *simultaneously* receive an aliquot share of the increased money supply, in the form of increased prices for their products. In this case, all factor prices would be bid up instantaneously, and again no increase of aggregate production would take place. One could argue that the increased nominal demand would attract certain quantities of "idle" resources that would not otherwise have been offered for sale. However, this would be the case only if the owners of these resources *under*estimated the decrease in purchasing power of money that results from the increase of the money supply.[14] If they *over*estimated it, more resources would lay "idle" as a consequence of the increase of the money supply than would otherwise have been the case. In short, there is again no systematic causation at stake—only accidental causation, which, as we have observed, is irrelevant for the justification of monetary policy.

A motivation theorist à la Hume could still argue as follows: Granted that the increased selling prices would not allow our entrepreneurs to buy more factors of production. But would this price increase not at the very least prompt *them* to *work* more and/or harder than before?

There are three difficulties with this argument. First, it is not at all plausible that entrepreneurs should delight in contemplating the mere level of their selling prices, without relating them to buying prices. Why should an entrepreneur be more motivated than otherwise, just because his selling prices increase, even though the prices

[14]Notice that even in this case the attraction of the "idle" resources into production does *not* mean that production has been stimulated or increased from any overall point of view. There is after all a reason why these resources lay "idle," namely, that from the long-term point of view of their owners, the present use of these resources seemed to be inexpedient. In short, they were not idle at all, but were used as a *reserve* for later periods, and it is probably not necessary to prove that this reservation demand has a very important social function. Consuming one's reserves in the present is, by any meaningful standard, not a reduction of scarcity, but an impoverishment. See on this problem Salin (1991).

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of his factors of production increase on equal footing? Second, it is not the case that the profit motive needs to be switched on through the printing press. Entrepreneurs are always seeking profits. They do not need bureaucrats sitting on a printing press to motivate them. Third, we have to consider again that the higher nominal receipts do not reflect a higher purchasing power. Why should entrepreneurs be willing to work more, thus forgoing leisure, for a mere nominal compensation?

The Numéraire Fallacy

According to this argument, a system of competing currencies lacks a common *numéraire* or standard of value for economic calculation and is therefore from an economic point of view inferior to a system endowed with such a common standard. As a consequence, it could be argued, the introduction of a fiat currency could provide significant net benefits. It would not just entail political redistribution, but also contribute to reducing scarcity in society.

This argument is premised on a wrong conception of economic calculation. It overstates the similarities between economic calculation on the one hand, and technological weights and measures on the other hand. The purpose of the latter is to provide the terms in which we subdivide things of the material world. By contrast, the purpose of economic calculation is to provide a common denominator for the comparison of different courses of action. It is a decision-making tool in a much more narrow sense than weights and measures.

The central device of economic calculation is the profitability calculus, which divides total selling receipts by total cost expenditure for each alternative course of action. Physically heterogeneous choice alternatives are thus rendered comparable in common terms, namely, in terms of percentages. This essential service of economic calculation in no way depends on other people calculating in terms of the same unit.

It could be argued that things are not really different as far as the use of physical weights and measures are concerned. Here too each individual could calculate in terms of self-defined units without thereby changing the result of the calculus. However, technological calculations do greatly benefit from common weights and measures, because this commonality facilitates *communication* among the different members of society. By contrast, economic calculation is not primarily a means of communication–in fact, entrepreneurs often take great pains to hide the result of their economic calculations from other people. And even to the extent that they do communicate these results, the relevant information is contained, not in any absolute numbers, but in the bottom-line rates of return on investment. And these rates (percentages) can be compared irrespective of the kind of money used.

One might object that the use of different kinds of money entails more uncertainty for the validity of one's economic calculation than would be the case if only one kind of money were used. This is so because there would be fluctuating exchange rates between the different monies.

While this observation is correct, it does not lend itself to the conclusion that a homogenization of the monetary system would be beneficial. The point is that *any* differences between products, firms, places, and times are sources of uncertainty. If such differences subsist on a free market, then we have good reason to assume that the package greater-heterogeneity-plus-uncertainty ranks higher on individual value scales than a reduction of uncertainty by greater homogeneity. We have already pointed out that, on an unhampered market, everyone may attempt to establish a homogeneous paper money. If he cannot bring the other market participants to accept his product, we may conclude that the citizens prefer the greater variety, and the greater uncertainty, of a heterogeneous monetary system to the increased certainty under a unified system.

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The Sticky-Prices Fallacy

According to this argument, inflation is a suitable means to increase the spread between selling prices and buying prices, thus making businesses profitable in those situations when they cannot bid down buying prices far enough to allow for continued production. The main application of the argument is to overcome rigidities in the labor market. Inflation, so the argument goes, reduces real wage rates to the equilibrium level so that full employment is restored and all productive resources (in particular, labor forces) of society can be used.

Ever since the 1920s, this argument has played a prominent role in monetary policy debates, and after World War II it rose to the status of a dogma. But it is a fallacy. It assumes *independence* between monetary policy and the institutions governing the pricing processes on the other markets, whereas these two realms are not in fact independent of one another. Contractual techniques such as the indexing of labor contracts might be rather imperfect vehicles, but in any case they show that market participants try to anticipate changes in the money supply. In many cases labor unions overestimate the future loss of money's purchasing power. The result is even more unemployment than before—a good illustration is given by the evolution of the German, French, and Spanish labor markets since the 1970s. Considering these incontestable facts, economists are well advised to start seeing labor-market rigidities again as a *dependent* variable, rather than as something outside of human control.

The Adjustment Fallacy I: Supply of and Demand for Cash Holdings

Most errors about the optimal quantity of money are variants of a basic confusion that we may call the "adjustment fallacy." This fallacy consists in the belief that the *nominal* quantity of money needs to be adjusted to prevailing economic conditions, lest a disequilibrium situation would occur. We can distinguish two main variants of this fallacy.

The first variant stresses that the quantity of money available for cash holdings must be adjusted to the demand for cash holdings (stocks). The second variant of the fallacy stresses that the supply of and demand for money in market exchanges must be adjusted—the nominal quantity of money offered for sale against other goods must be adjusted to the demand for money in the form of the quantities of commodities offered on the market (flows). In what follows we will deal with the first variant, and in the next section we then turn to the second variant.

The Supply of Cash Holdings

As far as the supply of cash holdings is concerned, we must point out that this supply is, at any point of time, identical with the aggregate quantity of money under the control of the individual market participants. The expressions "supply of cash holdings" and "quantity of money" are therefore synonymous to the extent that all units are liable to be acted upon at all, rather than for example buried at the bottom of an ocean.

Notice that *all units of money are held*, that is, to the extent that they are under the control of some one at all, are part of the individuals' cash holdings. In other words, there is no such thing as "money in circulation" that can meaningfully be distinguished from "money held." Money does not circulate in the sense that it would at some point of time not belong to any person. In exchange, money units are transferred

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from one person to another, but even in this case each single unit at each single point of time belongs to someone.[15]

The Demand for Cash Holdings

Why do we seek to own money at all? The essential service of money is in reducing the problem of the double coincidence of wants. This problem is greatest in a system of direct or barter exchanges. A partial solution is to abandon direct exchange and adopt indirect exchange—with money as an intermediary. In developed economies, virtually all indirect exchanges are performed with but one medium of exchange, or at any rate with a very small number of media of exchange. Media of exchange that are used in a great number of transactions are monies.

The services of any given sum of money depend on the quantities of other goods that can be exchanged for it. In 1960, $500 could buy more things than $550 in the year 2000 because the purchasing power of the dollar had considerably decreased in between these two years. Thus the exchange services of money have nothing to do with its nominal quantity, but only with its purchasing power.

But money's services not only depend on general conditions such as its purchasing power and alternative investment opportunities, but also on strictly personal factors that vary from one individual to another (Mises 1980, chap. 8). A sum of money provides its service not only at the moment when the money owner sells it to purchase any goods he desires, but it serves during the entire period in which its owner keeps it in his cash balance. At each point of time, acting man balances the amount of money he holds against his holdings of all other economic goods. We cannot say on *a priori* grounds how much money any given market participant will choose to hold. But we can say that he will sell money if he thereby acquires what he values more than the sum of money he abandons, and that he will buy money if he prefers this additional quantity to the price he had to pay. Each man's portfolio reflects not only his individual station in life, but also the other aspects of his personality: his virtues and his vices. The spendthrift has ever too much money in his hands, and not enough consumers' goods. The neurotic coward sits on mountains of cash. The adventurous entrepreneur places all money into investments, whereas the prudent businessman keeps a large cash reserve. In short, there are no general rules to determine how much money a man will hold. But this does not alter the fact that each man faces the everlasting trade-off imposed by scarcity: The more money he holds, the more he must forgo the services he could have derived from other goods, and vice versa.

Adjustment of Demand and Supply?

Now back to the problem that was our point of departure. According to a widely held opinion, monetary equilibrium in the sense of equality between the supply of and demand for cash holdings requires that changes in demand be matched by corresponding changes in the nominal supply. An increased demand requires that the supply increase too, and vice versa. But the supply of commodity monies such as gold and silver can only catch up very slowly with such changes and, due to technical limitations, gold and silver production might not deliver the required absolute quantities at all. Thus there seems to be a case for the government to impose a paper money, any quantities of which can be produced at virtually zero cost.

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[15]We can meaningfully distinguish "money in circulation" from those money units that are not under control of any member of society, for example, money units buried on the sea bed after a shipwreck. But in this case too all units of money in circulation are held at all points of time, and there is no difference between, on the one hand, money in circulation in the stated sense and, on the other hand, money held in individual cash balances.

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One way of refuting this argument is to point out that it relies on a misinterpretation of the laws of demand and supply. It is meaningless to speak about demand for and supply of one commodity without reference to the demand for and supply of alternative goods, that is, without reference to market prices. And because market prices can change, demand and supply can be adjusted to one another at any point of time.

Another way of countering the above case for paper money is to highlight its underlying assumption that the supply of cash holdings is *independent* of the demand for cash holdings (Hülsmann 2000, pp. 435, 438-40). Such independence does indeed exist in the case of most other goods, and the reason is that in most other cases the amount of *services* to be derived from the good in question essentially depends on the good's *physical* characteristics. For example, the services typically delivered by a telephone do not depend at all on the demand for this telephone, or on the demand for telephones of this type. Whether market participants hold the telephone in high or low esteem, whether they pay high or low prices for it, has no impact whatever on the amount of services to be derived from a telephone of this type. But in the case of cash holdings, supply and demand are not independent because here demand does depend on supply, and supply does depend on demand.

If the quantity of money is increased, the purchasing power of each unit will decrease below the level it would otherwise have attained. This means that the services that can be derived from each money unit have decreased, and since money owners are only interested in the amount of these services, rather than in the nominal quantities in which these services are embodied, their demand for nominal quantities of money will be higher than it otherwise would have been.[16]

Similarly, if the demand for money held increases, the supply of monetary services increases automatically—that is, without any change in the nominal supply of money. An increase of the demand for money held means that the individual under consideration (1) exchanges the money he owns only at lower money prices than otherwise, and/or (2) that he buys additional money units at higher prices (in terms of his labor and other parts of his property).[17] In both cases the increased demand *ipso facto* increases the supply of services of each money unit, because the increased demand *means* an increased purchasing power of money.

Notice that in the light of these facts it is not only superfluous, but also quite nonsensical to "adjust" the supply of money to be held to changes in demand. An increased nominal supply, far from offsetting the increased demand it was meant to offset, only causes a further increase of the demand for cash holdings. Far from equilibrating the supply of and demand for cash holdings, nominal supply changes merely elicit an additional nominal demand.

The Adjustment Fallacy II: Monetary Exchanges

Let us now turn to the other variant of the adjustment argument. In this variant, monetary policy is needed to adjust the supply of money—this time understood in the

[16]Edwin Cannan points out that it would be more appropriate to say, like Sidgwick, that the increased money supply induces an "extension" rather than an increase of the demand for money. Cannan offers a charming illustration of the principle of extension of demand: "People will take the additional currency as they take additional whiskey when it is watered down and offered to them at a lower rate, but that does not show that, in the absence of increase of demand in the narrower sense, they will take additional whiskey or additional currency at the old rate" (Cannan 1951, p. 10).

[17]See Say (1841, pp. 243f.). Notice that Say here spells out the meaning of Adam Smith's concept of "effective demand." Notice also that we will deal with the impact of sticky prices on the automatic adjustment of demand and supply at the end of the present paper.

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sense of the "flow" of money units offered for sale against other goods–to match the demand for money, defined as the quantities of these other goods offered for sale against money. Without monetary policy in place to do the adjustment job, there might be more or less serious mismatches (disequilibria) between the supply of and demand for money, and as a consequence there would be economic crises, most notably when the supply of money proves to be insufficient to buy all the products offered for sale.

Before we set out to examine this argument case by case, it might be useful to point out that the argument is squarely based on what could be called the "correspondence theory" or the "representation theory" or the "assignment theory" of money.[18] According to this theory, the money in some way "represents" the other goods, and the smooth operation of a monetary economy depends on how well the supply of money "corresponds to" the supplies of the other goods. If there is too much money around, inflation sets in and entails various negative consequences. If there is not enough money in the market, there will be more or less serious disruptions of economic activity. The task of monetary policy is therefore to ensure correspondence between money and the other goods, and it pursues this goal by modifying the quantity of money.

This theory is probably the one monetary fallacy that has done the greatest harm in the history of the West.[19] Before we turn to our case-by-case examination, let us emphasize from the outset that money does not represent or correspond to anything but itself. It is meaningless to assert such correspondence as far as market exchanges are concerned because the quantities that allegedly "correspond" to one another are identified only through the market process. Only if there were a nonmonetary unit of value that could serve as a *tertium comparationis* apart from market exchanges would it be conceivable that the money supply could be said to correspond to the supplies of other goods. But no such unit of value exists.

The Case of a Growing Economy

In a growing economy, ever more goods are offered on the market for sale against money. In such a case, an adjustment theorist could argue, one also needs more money to buy these greater quantities of goods, lest money prices would drop and strangle production.

The main problem with this argument is that it is premised on a much too static notion of entrepreneurship. Businessmen do not behave like robots that mechanically react to changes in their environment. They are entrepreneurs, who seek to anticipate relevant future changes. In an environment of decreasing prices, therefore, entrepreneurs *can* run a profitable business by bidding down buying prices or, if this is not possible, by abstaining from investment altogether. And successful entrepreneurs *will do* precisely that. The difference between successful businessmen and incompetent spendthrifts is that the former do base their actions on a correct estimate of future

[18]This theory had important champions in John Law, Montesquieu, Simmel, Wieser, Schumpeter, and many others. For a critique of Schumpeter's assignment theory, see Mises (1980, pp. 512ff.).

[19]Not surprisingly the fallacy arose at the end of the seventeenth century, which had witnessed the emergence of bank note currencies and of those privileged banks that should later become "central banks" (Sweden, England). Monetary theory was then still in its infancy and some of the theoreticians were led into wild speculations. They noticed that, in deposit banking, there is a correspondence between the quantity of money substitutes (in particular the bank notes) and the quantity of money proper (gold, silver, etc.), which these substitutes represent by contract between the bankers and their customers. John Law and others started seeing representations everywhere and postulated that not only was there to be correspondence between money substitutes and money proper, but also between money and the other goods.

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price changes. At any point of time, an entrepreneur can protect himself against the *future* impact of falling selling prices by either bidding down *in the present* the payments for his factors of production, or abstaining from investment altogether. The latter strategy is the wise course of action whenever he cannot bid down his factor prices, which is usually the case when he is more or less alone in anticipating the future drop of prices, whereas other entrepreneurs do not diminish their offers. If he cannot cut his costs he will not invest at all, but wait until his competitors, who paid the factor prices he believed were too high, eventually go bankrupt. Then he will step in and get the buying prices he needs for a profitable operation, and he might even buy the production facilities of some of the failed competitors.

Those businessmen who merely react to changes in market prices will of course be negatively surprised when they have to confront the growth-induced drop of the price level. They have bought their factors of production at prices that were not justified in the light of this subsequent event, and thus their profits are considerably reduced and more than often they will even incur losses to the point of bankruptcy. Now the point to stress is that there would be nothing wrong with these bad entrepreneurs going out of business.

Suppose that (a) their firms could operate profitably at the lower (possibly further decreasing) price level, and they only go bankrupt because they went into debt at the previous higher price level; in this case, the former owners—who turned out to be bad entrepreneurs—would be replaced by new owners, usually the former creditors, who could then go on to run the business profitably and produce for the market.

Or suppose that (b) these firms could no longer operate profitably at the lower (decreasing) prices level;[20] then our firms are unprofitable because other entrepreneurs can employ the factors of production that these firms need at even greater profit—thus they bid up the prices to such an extent that our firms become unprofitable. Yet in this case, it would be all right and good to close shop and make the factors of production available for other firms.

Because our assumptions (a) and (b) cover all possible cases, we can conclude that growth-induced declines of the price level do not entail any disadvantages for society as a whole.[21] There is no rationale for offsetting economic growth with a parallel increase of the money supply. Such a policy would affect the distribution of wealth within society, and only accidentally have a positive impact on aggregate production. Moreover, it would encourage entrepreneurial recklessness, because it rewards businessmen who speculate precisely on such a policy bailing them out in the future; and it punishes the prudent and self-reliant entrepreneurs who anticipate growth-induced declines of prices and therefore do not invest as much as they would have otherwise invested, thus making factors of production available for other lines of production.

The Case of a Shrinking Economy

In a shrinking economy, ever less goods are offered on the market for sale against money, and as a consequence money prices rise. What would be the policy implications from the point of view of the adjustment fallacy? Probably an adjustment theorist would argue that the increasing price level would somehow be harmful to society. But increasing prices are not more harmful than declining prices.

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[20]This could be the case, for example, because the growth process went in hand with a different distribution of wealth within society, which in turn changed the aggregate demand for the various types of products to the detriment of our firm, and to the advantage of other firms.

[21]Monetarist scholars have illustrated this economic law through empirical studies of growing economies with a shrinking price level. Two important cases are Germany and the U.S. in the last quarter of the nineteenth century—a period that is often misleadingly called a "depression." See Nocken (1993, pp. 157-89); Friedman and Schwarz (1963); Bordo and Redish (2003).

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Below, we will even go beyond this proposition and argue that the same thing holds true for decreases or increases of the money supply. In a market economy, there are strong incentives for the market participants to minimize the negative impact that changes of the quantity of money may have on production. As soon as these changes become excessive, profit opportunities arise that make it expedient to use *other* monies in lieu of the volatile one.

The Case of "Hoarding"

"Hoarding" is a pejorative expression for an increase in the demand for real cash balances. Let us first remind ourselves that all quantities of money are "hoarded" because each single money unit is held in the "hoard"–that is, in the cash balance–of some individual. Therefore it is impossible to hold money more intensely than it otherwise would have been held. Money held is money held is money held.

So what is the emotional prejudice, evident in the expression "hoarding," ultimately all about? As we have said, it is about the resentment that some people feel against other people's increased demand for real cash balances. The essential reason for this resentment is that "hoarding" brings about a decline of the money price level. It therefore threatens all business ventures that are based on the expectation of higher prices.

Above we have explained what an increased demand for cash balances means: the money owner parts with his money only at lower prices than he would otherwise have had to pay, and he is ready to offer more goods than otherwise in exchange for additional quantities of money. In both cases, all money units are held or "hoarded" as they are always held or hoarded. The difference is that the money owners value them higher than before.

We have already explained that such increases in the demand for real cash balances *cannot* be offset through a countervailing increase of the nominal money supply. Any such neutralizing policy would intensify the problem it was meant to solve. The additional money dilutes the purchasing power of all money units, thus prompting a further increase in the demand for money.[22]

It is true however that a paper money supply can also be increased at such a rate that a deterrent effect sets in. If the market participants anticipate a steady absolute decline of the purchasing power of money, they will decrease their demand for real cash balances even though their nominal cash holdings increase. In such cases, the nominal supply of money often grows at breathtaking rates, while at the same time the aggregate purchasing power of the money supply declines.[23] It follows that a paper money producer determined to fight "hoarding" at any cost may indeed succeed in this endeavor. The question is of course whether the attainment of this goal was worth sacrificing the currency–for nothing else but a collapse or at least a near collapse of monetary exchanges is usually involved.

Even more fundamentally, we need to raise the question of whether there is anything bad about hoarding. It is certain that "hoarding" will produce winners and losers–all changes in society do that. But hoarding will not *necessarily* disrupt production, because it can be anticipated. And even to the extent that it does disrupt the business of those entrepreneurs who did not so anticipate it, there is, as we have

[22]It might be argued that this policy does at least stabilize the level of purchasing power at which the demand for and supply of money equilibrate. In this case the argument no longer turns around adjustment *per se*, but around the old ideal of a stable purchasing power of money. For a critique of the attempts to measure and stabilize the purchasing power of money see Rothbard (1993, chap. 11).

[23]This phenomenon has been observed especially in the later stages of a hyperinflation, such as in the German hyperinflation of 1923.

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explained above, no rationale for bailing out these bad entrepreneurs, rather than letting the creditors take over their firms, or letting other firms take over the factors of production that hitherto were employed in these firms.

The Case of Inflation

So far we have studied the impact nonmonetary changes have on the relation between the demand for and supply of money. We now turn to changes emanating from the side of money—increases and decreases of the money supply, which for the purposes of our analysis we may call "inflation" and "deflation" respectively.

First of all it could be argued that the production of money could be excessive in comparison to the growth of the "goods side." We have already discussed the main fallacies involved in this argument. The services of monetary exchange do not depend on how the money supply changes relative to the supplies of the goods that are exchanged against money. An increased production of money entails higher money prices than would otherwise have been paid on the market. Under certain conditions, such increased money production will also lead to an absolute increase of money prices. But neither the absolute nor the relative increase of money prices (relative to the level they would have attained in the absence of the inflation) does, *per se*, imply any insurmountable negative consequences for the economy.

It is conceivable that on the free market the supply of a precious metal increases at such a rate that it becomes inexpedient to use it as a medium of exchange. Imagine for instance that somebody would suddenly find a mine containing more than a million times the quantity of gold in existence. As a consequence, gold might no longer be used as a medium of exchange. Other commodities would then replace it in this role. But as this example clearly shows, on a free market the money users can contain the damage done by unwarranted increases of any precious metal within fairly narrow limits. After all, to have a free market means that nobody is prevented from trying out supposedly beneficial alternatives. This is why inflation in a paper money system, in which only the authorities may experiment with alternatives, tends to be much more harmful, especially when we consider the fact that paper money producers have actually many incentives to spur inflation, rather than to reduce it.

But quite apart from the incentive issue, paper money entails several severely negative consequences that would not exist on a free market. For example, paper money producers have an almost unlimited ability to bail out any market participant. This entails the problem known as "moral hazard"—market participants with good personal and professional connections to the paper money producer invest in excessively risky ventures. When these investments turn sour, the paper money producer bails them out, that is, he rescues them at the expense of the other money users. This is one reason why paper money entails more waste than free-market money and thus creates more scarcity than would have existed on the free market.

Another reason why paper money inflation is qualitatively different from increases of the supply of commodity money is that it allows governments to finance all kinds of wasteful projects through debt. In particular, welfare and warfare are much larger and much more wasteful under government control of money production than on an unhampered market. They are presently so wasteful that it is completely out of the question to ever pay back the debts used to finance them. Why, then, can governments always find new creditors for more debts? Because all market participants know that these debts are backed up by the printing press of the government-controlled (often government-owned) paper money producer.

A third reason why paper money creates more scarcity of goods and services than would have existed on the free market is that the virtually costless production of paper money allows for arbitrary and huge increases of the money supply. It is virtually impossible for the market participants to adapt quickly enough to these changes.

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There is the very real danger that the interest rate on the loan market will drop below its equilibrium level. This would entail the boom-bust cycle that we know from the Misesian business cycle theory.

To sum up, increases in the supply of any money are not liable to be more harmful, *per se*, than a decreasing or stable money supply. The traditional focus of monetary economists on changes of quantifiable aggregates such as the money supply proves to be very inappropriate in this case, as in many other cases. The negative consequences that are commonly associated with inflation—in particular, the waste of resources due to adjustment problems—do not primarily spring from increases of the quantity of money, but from the lack of currency competition. And as we have seen, the very existence of a (government-protected) paper money entails problems that are unknown on a free market. Alas, for the same reason it is comparatively easy to handle these problems, at any rate from a purely technical point of view. All that is necessary is to abolish the monopoly privileges of the paper money producers, who would then quickly be driven out of business.

The Case of Deflation

Next to hoarding, deflation is the great scapegoat of monetary economics. The fight against deflation is today widely considered to be the most basic mission of monetary authorities, the bare minimum of economic statesmanship. It is the *prima facie* justification of inflationist monetary policy and of the institutions designed to apply it—in particular, monopolistic paper money producers.

But surprisingly this rationale does not stand on stronger ground than the other theories justifying present-day monetary institutions. The case for preventing deflation is not so much based on argument, but on a long tradition of demonizing it.[24] We therefore need to deal with this rationale in more detail than the other arguments.

We have already shown that the anti-deflation argument is untenable insofar as deflation is meant to mean a drop of the price level. The remaining question is whether the fight against deflation in a slightly different definition—a decrease of the money supply in the wider sense—has any better foundations. As we shall see, it is true that deflation in the latter sense entails a more or less dramatic fall of the price level. But it is unwarranted to jump from this fact to the conclusion that deflation destroys the division of labor, or that it can be offset through an inflationist policy.

What does it mean concretely when we say that the "money supply decreases"? Four forms of deflation can be distinguished and we will deal with them in turn.

1. Free Market Deflation

Deflation can mean that some market participants, for whatever reason, decide to destroy their money holdings, or at least parts thereof. This physical-destruction scenario has of course no practical significance; it has never led to a large-scale deflation of the sort that would cause sleepless nights to policymakers.

2. Confiscatory Deflation

Much more relevant in practice is deflation in the form of a confiscation of money holdings through the government. Confiscatory deflation has a long tradition. It is usually part and parcel of monetary reforms, for example, in Germany 1948, Brazil 1990, Russia 1990, and Argentina 2001. And fighting it is of course no problem for a government, because all it would have to do is *not* to confiscate the money of its subjects.

[24]It is a revealing fact that there is virtually no literature on deflation in modern economics. A recent exception is Kumar et al. (2003). While this work has the merit to finally bestow some attention to the phenomenon of deflation, it does little more than restate the untenable commonplaces that form the present-day mythology of deflation.

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3. Credit Money Deflation

Historically, deflation often occurred when monetary authorities redeemed credit money without neutralizing these redemptions through new issues, or when they destroyed paper money received as taxes. The usual purpose of these deflations was to bring inflated credit money back to parity, in particular, after wars. Such deflations took place in Britain after the publication of the Bullion Report, in the U.S. after the Civil War (the driving force was Secretary of the Treasury, Hugh McCulloch), and in Britain, Sweden, Holland, the U.S., and other countries after World War I.

As in the case of confiscatory deflation, it is very easy for governments to "fight" credit money deflation by simply not engaging in it or, better still, by never having created inflationary credit money in the first place. Still we might raise the question of whether the decrease in the quantity of money would, *per se*, have any negative consequences for aggregate production. The answer is in the negative. Decreases in the quantity of money have very much the same effect as increased hoarding, and businessmen and other market participants can adjust to them. Successful entrepreneurs will anticipate both the deflation itself and its impact on the price system. They will profit from their superior forecasting abilities at the expense of other entrepreneurs, who fail to bid down the prices of their factors of production in time to provide for a sufficient spread between these expenditures and their future selling proceeds. Again, there is no reason why this redistribution should have negative consequences for overall production. If anything, it can be expected to have a positive impact because it weeds out the less efficient entrepreneurs.

One might argue that credit money deflation entails more complications than increased hoardings. In particular, this form of deflation might provoke spiraling bearish expectations. When prices have dropped for a while, more and more people might assume that there is some sort of automatism in this trend and start increasing their demand for money. This will decrease prices even further, thus reinforcing the bearishness of these people, who then increase their demand for money even more, and so on.

Notice that such bearish expectation spirals can be very beneficial if they merely speed up the process whereby the market participants correctly anticipate the rock bottom provided by the minimum money supply at which the deflation stops. It is however possible that an expectation spiral overshoots. People might panic and hold on to their money even when prices have reached such a low level that it would be worthwhile to start spending money again. This can conceivably lead to a situation in which indirect exchanges with the deflationary money become impossible for technical reasons. The decreasing prices would require ever-smaller money units, but these cannot be produced in time (with the printing press) or cannot be handled at all in daily transactions (for example, microscopically small gold coins). In other words, great credit money deflations can raise the spectre of monetary disintegration, especially in the absence of entrepreneurial leadership.

How does the free market handle this problem? The solution is the same one that usually comes to be applied in the case of the inverse problem of hyperinflation. The name of the solution is money competition. As soon as the bearishness of the market participants on behalf of the deflationary money becomes excessive–that is, as soon as there is disequilibrium–other means of exchange are used in substitution of that money. The simple reason is that disequilibrium is tantamount to profit opportunities. Excessive deflations are therefore usually accompanied by the spontaneous adoption of *other monies*. The market participants would still find it profitable to engage in indirect exchange, and they could do this because they still have real assets to offer, most notably their labor services and other tangibles. As a consequence, they would start using other things as media of exchange, in particular, foreign paper monies and money substitutes provided by sound banks, but also commodity money

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such as gold and silver coins. The spontaneous adoption of currencies has been observed again and again in historical deflation processes, although government intervention usually prevented it from running its full course. Of course such processes go in hand with a substantial redistribution of wealth within society, but, as we have argued in some detail, this is not *per se* detrimental from an overall point of view.

4. Price-Control Deflation

In many historical cases, deflation set in when governments imposed price controls on the exchange rates between monies used in parallel circuits, most notably in bimetallist regimes. Economists know that these price controls activate Gresham's law–the bad (undervalued) money drives out the good (overvalued) money. The bad money continues to be used in monetary exchanges, while the good money is either completely withheld from the market or sold to residents of places where the price control does not apply. This disappearance of the good money means nothing else than that the overall quantity of money has been reduced in the territory subject to the price control.

Again, it is obviously very easy for governments to fight this form of deflation. And let us also repeat that interventionist deflations are condemnable, not because they entail a reduction of the quantity of money *per se*, or because certain market participants might not be able to successfully pursue their productive activities in this deflationary environment, but because they result from the violation of property rights.

Flight From Money

One of the most haunting emergency scenarios–for monetary policy makers at any rate–does not feature any physical disappearance or destruction of existing money units, but the *loss of their monetary nature*. Two main cases must be distinguished.

In the first case, money substitutes (for example demand deposits held at commercial banks) lose their status as money substitutes because no market participant wishes to buy them anymore. This is usually the case when the issuer of these money substitutes (the bank) is unable to redeem them against money (for example, against the paper bank notes issued by a "central bank"–that is, by a paper money producer).

In the second case, a paper money loses its status as money because no market participant wishes to buy it anymore. This usually happens in the terminal stage of a hyperinflation. But it could also happen, even without any previous period of price increases, if our present-day fiat money producers were stripped of their monopoly status and had to compete with "natural monies" such as gold and silver on equal legal footing. In any case, the resolution of the market participants not to use the paper money as a means of exchange makes it lose all of its value. The formerly cherished tickets become wastepaper.

In both cases *the flight from money sets in as a reaction to a previous inflation.* It does not drop out of the clouds as an entirely uncaused plague, but is the natural consequence of a previous regime of more or less extended inflation. It follows that the conventional bias against it gets things exactly upside down. The truth is that *the flight from money is a great force of liberty.* It destroys the institutional embodiments of inflation: fractional reserve banking and paper money. It stops inflation and thereby puts an end to the rechanneling of income in favor of the happy few with good connections to the politico-monetary establishment, and to the detriment of the politically unconnected rest of society. This consideration alone would be reason enough to welcome it.

The flight from money involves a disruption of the division of labor that cannot be prevented through entrepreneurial anticipations of the event. Quite to the contrary, such anticipations have the character of a self-fulfilling prophecy. If the market participants

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expect a future run on the fractional reserve banks, they will withdraw their money in time. But this very preventive action reduces the cash balances of the banks (the so-called "reserves") and thus precipitates a run in the present. Similarly, if the market participants expect the future evaporation of a presently existing paper money, they will as far as possible stop using it now. But this will reinforce the increase of the price level in terms of that money, and other people might therefore also be induced to abandon its use. Hence, a cumulative process involving an ever-lower purchasing power of this paper money might set in and ultimately lead to its complete abandonment.

Another reason why the flight from money always involves disruptions is that, under paper money and fractional reserve banking, the division of labor is to a more or less large extent geared toward satisfying the needs of the groups in control of the inflation. Yet let us hasten to point out that, for this very reason, those disruptions seem to be rather unobjectionable. They resemble the disruptions shaking a former slave economy after the institution of slavery is abolished, or the disruption of a totalitarian society once the despot has been dethroned. Like any other large-scale change, a flight from money destroys the value of certain factors of production, and it makes other factors of production valuable. Economic theory does not provide any grounds on which we could prefer the use of the former production factors to the use of the latter. Notice however that the new values reflect the preferences of free men (or at least: of men who are more free than they were before), whereas the old values gave much more prominence to the preferences of the ruling classes.

So far we have argued that the traditional emotional bias against the flight from money has no rational foundation. There is nothing wrong with it, lest one were to assume that the interests of the happy few who thrive on the perpetuation of the inflationary regime were identical with the interests of all members of society. The next question is: How would the free market handle such situations? On a free market, nobody would be coerced into accepting monies or money substitutes he does not wish to own. As a consequence, a flight from money would run its course, eradicating fractional-reserve notes and deposits, and evaporating paper monies.

How long will this process last? Does it entail long-winding depressions and unemployment? Not necessarily. There is no reason that would make it impossible, for example, that people adjust to the new circumstances instantaneously. If the market participants, at the very onset of the flight from money, anticipated how much each price would eventually drop, they would reach "rock bottom" in a second. Fractional-reserve notes and paper monies would disappear instantaneously from circulation, and everyone would be aware of the new prices of all existing goods in terms of the other monies. This is of course an unlikely scenario, but notice that it is not a physical impossibility that prevents instantaneous adjustment. The bottleneck is anticipations. Some businessmen are very good at anticipating future states of affairs that are radically different from the present ones, and these persons will turn their ability into profit during the flight from money (just as they reap profits in inflationary periods, for the same reason). But the great majority of market participants lack this ability, and therefore a flight from money is a time-consuming process that not only brings about a redistribution of resources, but also certain other problems.

Among these problems, unemployment is usually cited in the first place. But it is not an *essential* aspect of this process. Workers and entrepreneurs certainly *can* find wage-rate agreements that make the continued operation of the firm possible. This is so even if neither the entrepreneurs nor the workers correctly anticipate the end of the process.

Can monetary policy successfully counteract a flight from money? Again, the easiest way to do this is by not letting it come to inflation in the first place. The secure road around the flight from money is to abolish inflation here and now. But once this flight has set in, *it cannot be prevented with the conventional means of monetary policy*. Increasing the money supply would only pour fuel on the flames, because the new

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money units merely amplify the very reason why the money is abandoned–its absolute loss of purchasing power. On the other hand, a policy of decreasing the money supply on a massive scale might conceivably prevent the money from being completely abandoned. But this policy would require that the monetary authority seize major parts of the cash holdings of the citizens. Such situations have often led to a change of the monetary constitution. Banks then usually are granted the privilege to refuse redemption, thus turning their tickets into paper money. In other cases, the money threatened by extinction has been replaced by a new currency as in Germany in 1923 and 1948. More recently, currency boards have played a similar role (Gertchev 2002). The offshoot of all of this is that flights from money are times of dramatic changes. But if radical policy shifts are necessary anyway, why not liberalize the production of money right away?

Conclusion

The competitive production of money can work and, we might add, has worked well in all known historical cases. We have shown that from a normative point of view that stresses the integrity of private property, it is superior to its logical alternative: government control of the money supply. And we have argued at some length that there is no tenable utilitarian case to be made for modifying the free-market production of money through political means. Conventional monetary policy and its institutional underpinnings in the form of central banks and similar monetary organizations are therefore useless at best, and should be abandoned. Politically induced changes in the money supply–the very essence of noninterventionist monetary policy–do not alleviate the problem of scarcity. Their main effect is to enrich some groups at the expense of other groups, and to create several grave problems that are unknown in the market economy.

Our analysis has also shown the importance of a competitive production of money. It is an error to equate the free market in money with the prevalence of commodity money. The late-nineteenth-century gold standard was a *fiat* standard! Problems start as soon as any type of money enjoys the legal privilege of being the "standard" money, and thus is immunized from competition. We have shown that competition is essential for the smooth replacement of one (technologically inferior) money by other commodity monies. It is equally essential for a fast adjustment process in times of hyperinflation or deflationary spirals. In the light of this, the nineteenth century standardization movement appears as one of the burdensome legacies of classical liberalism.

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Optimal Monetary Policy: A New Keynesian View

Guido Zimmermann

The New Keynesian View

As Paul Samuelson once put it: Adam Smith is dead and Keynes is dead; well—and Mises is dead, too. But Keynesianism is alive and well and back with a vengeance. Built on solid neoclassical foundations, this "new" Keynesianism, which features the effects of nominal rigidities in the presence of economic shocks and the existence of involuntary unemployment, represents the theoretical core of modern monetary policy. This article gives a short overview of the new Keynesian theory of optimal monetary policy. The concept of inflation targeting represents the core of this theory. It will be illustrated with the help of Walsh's simple model of inflation targeting (Walsh 2001b). On the basis of this model, the implications of the theory of optimal monetary policy for practical monetary policy will be demonstrated.

What is New Keynesianism?

Basic Principles

Modern macroeconomics is divided into two camps. The neo- or new-classical research program of the real business cycles school (e.g., Plosser 1989) is convinced that the cause of business cycles is to be found in the stochastic character of economic growth itself: cycles and trends are explained with the help of the same models. The new Keynesian research program is harder to summarize (DeLong 2000, p. 83). Perhaps it is easier to describe what new Keynesianism (NUKE) is not than what it is: (1) Following Mankiw (1992), NUKE is not about an exegesis of Keynes (1936). (2) NUKE does not put in doubt that the insights of classical theory are helpful for economic analysis. (3) NUKE does not believe that capitalism is threatened by oversaving, and that this must be hindered by deficit spending programs. (4) Monetary policy is more powerful in fighting recessions than fiscal policy. (5) But policy undertaken should not be discretionary but rule-based. (6) Monetary policy has to consider that inflation has its costs.

As you can see, NUKE does not have very much in common with "old" Keynesianism à la Tobin (1993). Mankiw put it this way:

> New Keynesian economics is far different from old Keynesian economics—so different, in fact, that today the label "Keynesian" may generate more confusion than understanding. With new Keynesians looking so much like

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> old classicals, perhaps we should conclude that the term "Keynesian" has out-lived its usefulness. Perhaps we need a new label to describe the school of macroeconomics that accepts the existence of involuntary unemployment, monetary non-neutrality, and sticky wages and prices. Until a new label is found, however, we can safely say that Keynesian economics is alive and well. (Mankiw 1992, p. 565)

Therefore, a new Keynesian is someone who believes in involuntary unemployment, the short-run nonneutrality of monetary policy and the short-run inflexibility of wages and prices.[1,2]

The New Keynesian Core of Modern Macroeconomics

In light of the empirical failure of new classical economics to give a plausible explanation for the occuring changes in output, employment, and unemployment, it is hardly astonishing that the basic principles of NUKE (see DeLong 2000) are virtually identical with the core principles of modern macroeconomics.[3] What constitutes these core principles (Solow 1997; Taylor 1997; Eichenbaum 1997; Blinder 1997; Blanchard 1997)? First, in industrial countries real output oscillates along an increasing growth path. In the long run, this growth path is determined by the supply-side. Second, in the long run there is no trade-off between inflation and unemployment: an increase in the growth rate of the money supply manifests itself in the long run merely as a proportional increase in the inflation rate. The "natural" equilibrium unemployment rate as understood by Friedman (1968) and Phelps (1967), which is determined exclusively by real factors, remains unaffected by monetary policy. Hence, in the long run central banks should have an inflation target only. Third, short-run fluctuations are generated by changes in aggregate demand. In the short run, there is a trade-off between inflation and unemployment, as is described empirically by the Phillips curve. This trade-off is only possible, because in the short run wages and prices are not flexible enough to clear markets continously. For practical monetary policy this implies that it should strive to stabilize the growth of aggregate demand in order to minimize fluctuations of real output and inflation. Fourth, expectations of households and firms react to policy measures. Hence, monetary policy has to consider these expectations and act accordingly: building up credibility and transparency is the name of the game.[4] Fifth, the evaluation of monetary policy should not be based on isolated one-time changes in policy instruments but on a series of changes which are connected by a policy rule. Sixth, the IS-LM model still belongs to the "hard" core

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[1]Gordon (1990, pp. 1116 and 1135):

> The essential feature of Keynesian macroeconomics is the absence of continuous market clearing. Thus a Keynesian model is by definition a non-market-clearing model, one in which prices fail to adust rapidly enough to clear markets within some relatively short period of time. . . . The task of new-Keynesian economics is to explain why changes in the aggregate price level are sticky.

[2]For a survey of NUKE see Gordon (1990).

[3]Differences between the new Classicals and the new Keynesians exist more in terms of modeling the supply-side and less in modeling the demand-side and the effects of monetary policy (Gordon 1990, p. 1117). How erroneous today's labels in modern macroeconomics are can be seen, if you consider that NUKE has fully adopted the essential monetarist axioms (DeLong 2000). Kimball (1995) denotes modern macroeconomics as "neomonetarist."

[4]Equilibrium exists if expectations are fulfilled. Equilibrium does not imply cleared markets.

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of modern macroeconomics. In this model, prices and wages are largely predetermined in the short run and change in the logic of a Phillips curve equation. In the short run output is determined by demand. Aggregate demand, represented by an IS-curve, responds directly to fiscal policy measures. Due to the interest sensitivity of the IS-curve, and given that it determines interest rates, monetary policy can steer aggregate demand. Okun's law postulating a simple linear relationship between the percentage change in output and the absolute change in the unemployment rate connects changes in output growth with changes in the unemployment rate.[5]

Why Does Money Affect Output?

Why does money affect output in the short run? What is the cause of nominal rigidities and what role do they play in this process (Blanchard 1999, p. 19)? These are the two key questions of modern macroeconomics. There is a consensus about what happens after an exogenous increase in nominal money supply: Given nominal prices, the increase of the nominal money supply leads to a decrease of the nominal interest rate and, due to nominal price rigidities, to a decrease of the real interest rate. This decrease in real interest rates induces a rise in aggregate demand and in the demand of every single good, given nominal (and therefore relative) prices. Higher capacity utilization leads to higher marginal costs. Hence, the increase in demand for each good gives price-setters an incentive to increase their relative prices. If prices were set continuously, the attempt of each price-setter to increase his relative price would fail. All prices, and therefore the aggregate price level too, would rise until the aggregate price level is adjusted proportionally to the increase in nominal money supply. Aggregate demand and output would adopt their initial values. Hence, money would be neutral even in the short run.

In the real world, individual prices do not adjust continously but are set discretionarily via staggering which is due to the fact that cost changes entail a change in prices. This price-setting behavior, which–carried out at intervals–is perfectly rational at the microeconomic level, leads to considerable fluctuations in output at the aggregate level and therefore to macroeconomic inefficiencies. This is to be explained by the fact that the staggered price adjustment of individual prices leads to a delayed adjustment of the aggregate price level in reaction to nominal shocks.[6,7] During the adjustment process, real money supply is higher than its initial value as is the case with aggregate demand whereas real interest rates are lower than their initial value. In the long run, the aggregate price level adjusts proportionally to the increase of nominal money supply. Aggregate demand, output, and relative prices adopt their initial values. Money is neutral, but only in the long run.

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[5]The "new" micro-foundational IS-LM model à la King (2000) and Clarida et al. (1999) is now the standard framework of the new Keynesian theory of optimal monetary policy.

[6]Metaphorically, a chain gang moves slowly, because it can coordinate its movements only very imprecisely. The shorter the length between two members of the chain gang, and the greater the number of members, the slower will be the movement of the whole chain gang (Blanchard 1999, p. 20).

[7]The speed of the adjustment of the nominal price level depends on the elasticity of the desired relative prices in reaction to changes in aggregate demand. The higher this elasticity is, the higher individual price-setters will set their prices. In this case, the price level will rise faster. Hence, effects of money on output tend to be short-lived. To explain nominal rigidities, i.e., a slow adjustment of the price level in reaction to changes in money supply, one needs real rigidities, i.e., a low elasticitiy of individually desired relative prices in reaction to changes in demand (Blanchard 1999, p. 22).

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Higher aggregate demand can only lead to higher output if the market structure on goods markets provides price-setters with incentives to supply more ouput, even if the price stays set. For this reason, monopolistic competition is assumed for goods markets. In a monopolistically competitive market structure, higher demand for goods translates into higher output, because in a monopolistically competitive setting, there is virtually always a lack of demand.

Monetary policy can produce real effects only because in the short run, prices are relatively inflexible. As nominal rigidities are considered to play the decisive role in cyclical fluctuations in employment and output, NUKE embarks upon the explanation of nominal rigidities and their effects.[8] In this context, an explicit and utility-based welfare analysis of the consequences of alternative monetary policies can be undertaken with the help of a dynamic general equilibrium model, in which behavioral equations are based on an explicit optimizing process. Hence, the new Keynesian framework may serve as the foundation of the design of an optimal or at least desired monetary policy (Gali 2001, p. 1).

The New Keynesian Theory of Optimal Monetary Policy

The Design of Optimal Monetary Policy

Policy Goals

The central question of the theory of optimal monetary policy is: how should monetary policy react to shocks (Clarida et al. 1999, p. 1665)? What is monetary policy—science or art (Walsh 2001a)? The theory of optimal monetary policy suggests that monetary policy is a science. This implies that economists know what they need to know in order to design and implement a "good" monetary policy. The theory of monetary policy relies on the assumption that policy makers are well-meaning central bankers who aim to maximize the utility of a representative household. This dynamic optimization problem is solved under the restriction of given resources, institutions, and information (Gali 2001, p. 19). The target function of the central bank translates the behavior of the target variables into a measure of welfare which is used by policy makers in their decision process. It is usually assumed that the arguments of the central banks' optimal target function include a specified inflation rate and potential output. Since the target function is specified as a loss function, the central bank tries to minimize the expected future welfare losses, which result from the deviations of output and inflation of their respective target values. When considering that a decrease in inflation is followed by temporary output losses, this policy is optimal in the sense that marginal utility and marginal cost of monetary policy actions are equalized (Walsh 2001b, p. 5).

Inflation Targeting as the Core of Optimal Monetary Policy

The concept of inflation targeting is at the core of the theory of optimal monetary policy. What are its most important features? First of all, the announcement of an official numerical inflation goal for a specified period of time. Second, the explicit acknowledgement that a low and stable inflation rate should be the foremost goal of a central bank. The advantage of this concept is that transparency and coherency of monetary policy is strengthened, entailing the elimination of uncertainites concerning

[8]The term "Keynesian" aims at the feature of nominal rigidities. The term "new" aims at the methodological progress in macroeconomic model-building in the form of dynamic general equilibrium models in the tradition of the real business cycles literature (Clarida et al. 1999, p. 1661).

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future inflation rates. This increases the credibility of the central bank in fighting inflation, which, in turn, leads to a decrease of inflation expectations of households and firms (Svensson 1999, p. 217). Another advantage of inflation targeting is that this policy framework includes a flexible and cautiously "discretionary" monetary policy. This is facilitated by an increased accountability of the central bank with respect to the degree of goal fulfillment (Bernanke and Mishkin 1997).

The fact that there is no long-run trade-off between output and inflation suggests aiming at a zero inflation rate (e.g., Goodfriend and King 1997, pp. 262). There is a consensus, however, that an inflation target between zero and two percent is optimal, allowing for measurement errors. A higher inflation target would cost too much (Cecchetti 2000, p. 48).

The concept of inflation targeting is built on three principles: To reach the inflation target, the central bank is to (1) focus on the output gap, (2) follow the Taylor principle, (3) and act in a forward-looking way (Walsh 2001a).[9]

- FOCUS ON THE OUTPUT GAP: The output gap is the deviation of output from its equilibrium level. A major cause for changes in the inflation rate, the output gap is of primary interest to monetary policy. The central bank tries to close the gap between actual ouput and potential output. Excessive inflation sets in if the central bank pursues a too ambitious output goal, because increasing output raises real marginal cost. In response, firms raise their prices.

- FOLLOW THE TAYLOR PRINCIPLE: The Taylor principle says that monetary policy should react to an increase in the inflation rate with an over-proportional increase of the nominal interest rate. This guarantees that the real interest rate, which is relevant for aggregate demand, is changed. For under-proportional interest rate increases would entail a decrease in real interest rates which, in turn, would lead to aggregate demand rising even further and risk triggering an inflation spiral. One way to implement the Taylor principle is to apply the famous Taylor rule (Taylor 1993).[10] This rule specifies exactly to what extent the interest rate has to be changed in reaction to changes in the inflation rate and the output gap.[11] The appeal of the Taylor principle is that monetary policy does not need to know if a higher expected inflation rate results from a temporary aggregate demand shock or from a shock provoked by financial markets (Daniel 2001).

- FORWARD-LOOKING BEHAVIOR OF THE CENTRAL BANK: Monetary policy influences the real side of the economy with a certain lag. A change in the interest rate has its maximum impact only 12 to 18 months later. The effects of the inflation rate take even longer before they set in. Hence,

[9]If the central bank aims at not only a certain inflation target but also to stabilize, we speak of "flexible" inflation targeting. In the case of "strict" inflation targeting, the central bank does not aim for a stabilization of output. Flexible inflation targeting implies that monetary policy does not strive to achieve the inflation target too rapidly, because of the high cost of temporary output losses.

[10]The term "rule" implies a reaction function, which describes the behavior of the interest rate under control of monetary policy. This interest rate is a predictable function of a few economic variables (Allsopp and Vines 2000, p. 17).

[11]Therefore, the theory of optimal monetary policy is also described as new normative macroeconomics (Cecchetti 2000, p. 44).

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central banks cannot wait until actual inflation starts to rise but they have to act in a forward-looking manner.

One monetary policy framework that meets these three principles is the concept of inflation forecast targeting. The latter helps implement the concept of inflation targeting in applied monetary policy. According to inflation forecast targeting, the central bank should stabilize inflation at a low level and close the output gap at the same time. For this purpose, central banks use all available knowledge and information about the future course of inflation, the actual and future economic conditions of the real side of the economy, and of the monetary transmission mechanism. Due to the lagged effects of monetary policy measures, central banks need to react to inflation forecasts. If the inflation forecast predicts that inflation will rise, the central bank should raise interest rates, before actual inflation rates start to rise and vice versa. The central bank changes the interest rate until the inflation forecast corresponds to the inflation target. The extent of the monetary policy reaction depends on the sensitivity of the inflation forecast to interest rate changes.[12,13]

A Simple Model of Inflation Targeting

The simple inflation targeting model by Walsh (2001b), which will be presented below, will give a flavor of the spirit and the method of the theory of optimal policy. The model has two components: First, an expectations-modified Phillips curve which describes the supply-side of the economy. Second, a description of monetary policy reflecting the preferences of the central bank regarding the trade-off between inflation and unemployment. This second relationship describes the demand-side.

Aggregate Supply: The Phillips Curve

The Phillips curve depicts a relationship between the inflation rate π, the expected inflation rate π^e, the situation of the business cycle defined as the gap between actual output y and the "natural" output level y^n, and an inflation shock variable e. x is the percent output gap $\left[x = \frac{y - y^n}{y^n}\right]$. The Phillips curve can be written as

$$\pi = \pi^e + ax + e \tag{1}$$

This equation describes a linear relationship between the output gap and the inflation rate.[14]

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[12]See Walsh (2001a) for practical implementation problems of optimal monetary policy principles.

[13]Mishkin and Schmidt-Hebbel (2000) find in a cross-country analysis that inflation targeting is a quite successful monetary policy framework compared with alternative monetary regimes.

[14]In this respect, the new Keynesian version of the Phillips curve differs from the Phillips curve specification here: First, because the expectations variables in the new Keynesian version are forward-looking. If firms set their prices, which will then be fixed for several periods in the future, they will take into account the path of future inflation. Second, here the Phillips curve is not derived from microeconomic first principles. The coefficent on the expected future inflation is in this case not equal to 1, but should equal the subjective discount rate. Due to empirical research, a value of 1 is normally assumed. A different value of the coefficient would not change the qualitative implications of the model (Walsh 2001b, p. 4). Inflation dynamics implied by the ouput gap and the Phillips curve is the decisive characteristic of NUKE (Gali 2001, p. 10). The micro-foundational "new" Phillips curve is from a theoretical point of view a central innovation in monetary theory. But empirically, it is not consistent with the stylized facts of the dynamic effects of monetary policy (Mankiw 2001, p. C59).

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Aggregate Demand: The Monetary Policy Rule

To analyze inflation targeting it is assumed that monetary policy tries systematically to minimize deviations of output from the natural output level and deviations of the inflation rate from the inflation target π^T. "Systematically" signifies in this context that in its doings, the central bank takes into account the utility and the cost of its activities, i.e., the central bank behaves optimally, given its goals. It is further assumed that for the central bank marginal costs resulting from changes of the inflation rate and the output gap are proportional to the deviations from their respective targets π^T and zero. This is, e.g., the case, if the goal of the central banks is to minimize the squared deviations of π and x around their respective target values. The marginal cost of fluctuations in output is λx and the marginal cost of fluctuations in inflation is $k(\pi - \pi^T)$. λ (k) is a measure of the cost of fluctuations in output (inflation) for the central bank. It is assumed that the central bank tries to push x towards the target value zero. At the beginning, $x < 0$ is assumed. Hence, the economy operates below the natural level of output. A slight increase in x, Δx, leads to a gain of $-\lambda x \Delta x$. Corresponding to the increase in x, costs rise in the shape of an increase in the inflation rate. The effect of inflation is, by equation (1) $a\Delta x$, and the resulting cost is $ak(\pi - \pi^T)\Delta x$. Equalizing marginal cost and marginal utility of monetary policy actions gives

$$x = -\left[\frac{ak}{\lambda}\right](\pi - \pi^T).$$

This equation describes the relationship between the output gap and deviations of the inflation rate from its target value, which is consistent with monetary policy minimizing the cost of output variability and inflation variability. If it were possible for the central bank to control the output gap perfectly, the result would be exactly $x = -\left[\frac{ak}{\lambda}\right](\pi - \pi^T)$. When taking into account that next to monetary policy, disturbances u influence output and aggregate demand besides monetary policy, the result is

$$x = -\left[\frac{ak}{\lambda}\right](\pi - \pi^T) + u \tag{2}$$

or

$$\pi = \pi^T - \alpha(x - u), \tag{3}$$

where $\alpha = \frac{\lambda}{ak}$. Equation (3) describes the monetary policy rule followed by the central bank. $\frac{\lambda}{a}$ describes the trade-off between inflation variability and the volatility of the output gap. If the relative weight, λ, of the output goal in the loss function of the central bank increases, the variance of the output gap decreases, whereas the variance of the inflation rate increases. A central bank, which puts a higher weight on the output goal, accepts a higher variability of inflation and a lower variability of output than a central bank with a higher weight on the inflation goal. The price for attempting to generate a higher stability of inflation is a higher variability in the real economic activity and vice versa.

The Monetary Transmission Mechanism

In the day-to-day handling of monetary policy, the control variable of the central bank is a short-run interest rate. The central bank is to set the interest rate in such a way that the intertemporal loss function is minimized. In order to achieve this goal, the central bank has to have an idea of the monetary transmission mechanism

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(Svensson 1998, p. 205). Unfortunately, the functioning of this transmission mechanism is only little known.[15]

The relationship between the nominal interest rate, output, and inflation is drawn on the basis of their impact on aggregate demand. The IS curve defines real aggregate demand as a negative function of the real interest rate. A simple IS curve (scaled by the natural output level) can be written as

$$\frac{y}{y^n} = \frac{y_0}{y^n} - b[i - \pi^e] + u. \tag{4}$$

i is the nominal interest rate. The negative coefficient on the real interest rate reflects, in new Keynesian models, intertemporal substitution effects in consumption as well as, in old Keynesian models, effects on investment through the credit cost and credit availability channel. The aggregate demand shock u is not anticipated by the central bank. Hence, u is not correlated serially with a statistical mean of zero. All anticipated or persistent changes in demand are represented by changes of y. The long-run equilibrium real interest rate is therefore given as

$$r^* = \frac{(y_0 - y^n)}{by^n}. \tag{5}$$

When subtracting one from both sides of the IS equation (4), we obtain

$$x = x_0 - b[i - \pi^e] + u,$$

where $x_0 = \frac{(y_0 - y^n)}{y^n}$. Given the definition of r^* in equation (5), the output gap results in

$$x = -b[i - \pi^e - r^*] + u. \tag{6}$$

In the case of absent demand shocks, output is lower than the natural level of output (x is negative), if the current real interest rate is higher than the long-run time-variant equilibrium real interest rate r^*.

Policy Rules

Monetary policy rules (e.g., Taylor 1993) specify the policy instrument, the nominal interest rate i, as a function of the inflation rate and the output gap. As the inflation rate and the output gap are endogenous variables, the monetary policy reaction function can be represented in different ways. For example, when solving the Phillips curve equation (1) and the monetary policy rule (3) for the output gap x, when substituting the result for the output gap (6), and when solving for the nominal interest rate, which is consistent with a short-run equilibrium, we obtain

$$i = r^* + \pi^e - \frac{\pi^T - \pi^e - e}{b(a + \alpha)} = i^T + \left[1 + \frac{1}{b(a + \alpha)}\right](\pi^e - \pi^T) + \frac{e}{b(a + \alpha)}. \tag{7}$$

[15]Mishkin (1992) identifies eight different transmission channels.

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$i^T = r^* + \pi^T$ is the long-run equilibrium nominal interest rate. The demand shock u does not appear in the policy rule anymore, because the central bank sets the nominal interest rate, by assumption, before it can observe the demand shock.

The coefficient of the expected inflation rate in (7) is greater than one. Hence, this policy rule stipulates that the nominal interest rate should be raised over-proportionally, if the expected inflation rate is higher than the inflation target of the central bank. This ensures that an increase of the expected inflation rate induces the central bank to raise the nominal interest rate to such an extent that the real interest rate is increased. The increase in the real interest rate leads to the necessary reduction of output to contain inflation. According to the policy rule, the nominal interest rate should be changed proportionally if the estimated equilibrium interest rate changes. The nominal interest rate is to be raised in reaction to positive inflation shocks. This is the reason why a positive inflation shock reduces the output gap.

Implications for Monetary Policy

What does the new Keynesian theory of optimal monetary policy imply for the constitution of central banks and practical monetary policy (Fisher 1994, p. 301; Svensson 1998; 2001, p. 4)?[16]

- The central bank should be given the authority to change the interest rate and other variables relevant for monetary policy so that it can achieve its policy goals.
- The central bank should have a clearly defined mandate including price stability.
- The central bank should publicly announce and target an explicit symmetrical positive inflation goal for a specified period of three years. The announcement should describe exactly the circumstances, which give allowances for deviations from the inflation target due to changes in the terms of trade, the interest rates, and indirect taxes.
- The central bank should target a consumer price index which does not take into account interest-related cost. The reason for this is that an increase of the interest rate aimed at decreasing the inflation rate would have the contrary effect of raising the inflation rate.[17]
- The central bank should pursue the concept of flexible inflation forecast targeting. This implies that the central bank should stabilize output and inflation. In this context, central bank rules should take into account the

[16]New Keynesians do not believe that a monopolized money economy is necessary. As Chris Waller once stressed, in the new Keynesian framework money has no role as a medium for exchange, but serves only as a numéraire. The equilibrium allocation can be achieved with any unit of account. Therefore, central banks do not have a role to play. As Woodford (2001, p. 57) shows, it is quite possible that the information revolution strengthens the privatization of money supply. But even in such a system, central banks would play a central role due to historical network externalities. Therefore, a privatization of the money supply does not change the new Keynesian basic concept of optimal monetary policy.

[17]The question of whether a central bank of a small open economy should use monetary policy rules which take account of the nominal exchange rate has remained open so far (Dennis 2001).

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short-run Phillips curve trade-off: price stability is always more important than output stability.

- In order to make sure that the central bank does not act in an excessively discretionary way and to ensure that inflation forecasts are not biased, it is imperative to maintain the greatest possible transparency with respect to the numeric inflation goal and the weight of the output stabilization goal in the loss function of the central bank. For transparency in monetary policy translates into a committment of the central bank to do everything, absolutely everything, to minimize its loss function. The required transparency is given credence by the publication of inflation reports.

- The central bank should be held accountable and responsible in two ways: On the one hand, it should be held responsible for the achievement of its goals. This means that twice a year, the president of the central bank should account for the central central bank's doings in connection with the achievement of its goals in front of the legislature and thus in front of the public. On the other hand, the central bank is required to explain and justify its monetary policy decisions in front of the legislature and the broad public. If the central bank does not succeed in achieving its goals, punishment in the shape of inexorable public questioning and the corresponding loss of reputation should suffice.

- Due to the nondemocratic character of an independent central bank, the government should have the right to overrule the monetary policy decisions of the central bank. However, this should go along with costs for the government.

- The central bank should not be forced to finance public budget deficits and to administer public debt.

- Responsibilities for exchange rate policy and interest rate policy should not be divided as long as the exchange rate is flexible. For, with flexible exchange rates, the exchange rate and the interest rate are interdependent.

- The board of central bank governors should consist of experts on monetary policy. Each member should have one vote. Tenure should be five years and staggered because this means that only one member is (re-) elected at a time. After each monetary policy meeting, votes by names and anonymous minutes should be made public very fast. The monetary policy committee should be held responsible for monetary policy issues.

SUMMARY

This article gives a short overview of the new Keynesian theory of optimal monetary policy. The concept of inflation targeting represents the core of this theory. It is illustrated with the help of Walsh's simple model of inflation targeting (Walsh 2001b). On the basis of this model, the implications of the theory of optimal monetary policy for practical monetary policy is demonstrated.

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New Keynesian Monetary Views: A Comment

Jörg Guido Hülsmann

The essential fallacy of John Maynard Keynes and his early disciples was to cultivate the monetary equivalent of alchemy. They believed that paper money was a suitable means to alleviate the fundamental economic problem of scarcity. The printing press was, at any rate under certain plausible conditions of duress, a substitute for hard work and savings and cutting prices (Hazlitt 1959, 1960).

The self-styled new Keynesians have not at all abandoned this fallacy and they therefore do not differ in any essential respect from the old Keynesians, in spite of the pains they take to distinguish themselves from the latter. The new Keynesian recommendation for monetary policy is to "stabilize the growth of aggregate demand." In plain language this means that the monetary authorities should never stop flooding the economy with paper money. Recognizably, this is the core tenet of the old Keynesian monetary program, which in itself had been nothing but even older fallacies clothed in the new language of aggregate analysis.

In many respects, new Keynesian views on monetary theory and policy seem to be even more fallacious than those of their predecessors. Whereas Keynes and his immediate followers were still trained in the old-fashioned art of economic reasoning, the new Keynesians are macro economic purebreds.[1] Their expertise lies more or less exclusively in the field of modeling. As with the macroeconomics profession in general, they are devoted to a positivistic methodology, putting all their energies into modeling quantitative relationships among things that are the result of human action, rather than into the analysis of human action itself. Not surprisingly, therefore, their "science" of the economy resembles a hotchpotch of educated guesswork, conventions, and fictions, all designed to make the problems under consideration amenable to mathematical treatment. At one point in his exposition, Zimmermann briefly concludes that the optimal inflation rate should be zero. But then he goes on: "There is a consensus, however, that an inflation target between zero and two percent is optimal, allowing for measurement errors" (Zimmermann 2003, p. 7). Those who are bewildered by such turns of argument might also wonder how one can believe that policy recommendations derived from a mere consensus of academic economists have anything to do with science. Similar problems relate to the frequent jumps between statements of facts and value judgments, and to new Keynesian uses of expressions such

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[1]Clarida, Galí, and Gertler (1999, p. 1662) state that new Keynesians reclaim the Keynesian heritage insofar as they focus on the economic implications of temporary nominal price rigidities, and that they are "new" Keynesians to the extent that they rely on more recent methodological advances in macroeconomic modeling, especially those developed in real business cycle theory. Compare this with the early ("pre-Keynesian") Keynes (1924, 1971).

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as "principles" and "first principles" and so on. In the writings of Austrian economists, these words have a completely different meaning.

Honest new Keynesians acknowledge that their models are not a realistic representation of parts of the observed economy. They admit that their reasoning is based on stipulations and conventions of a more or less fictional and therefore arbitrary character. But they believe that economic science cannot do any better than that, whereas Austrians think they know a better approach. As a consequence, from an Austrian perspective, new Keynesian policy prescriptions do not exactly stand on the firm ground of science. For example, is it really true that central bankers are supposed to be well-meaning economic Tsars? And is it really true that central bankers seek to minimize deviations of output from potential output? More importantly still, even if we assume for the sake of argument that both of these questions can be answered in the affirmative, we still have still not even touched the fundamental problems of monetary policy analysis—problems that require sober examination before one can venture to make any "scientific" recommendations to policymakers. Here is one for a starter: How can central bankers, or for that matter anybody else, know the potential output of an economy at any point of time? And also: Can monetary policy close the gap between actual and potential output at all? Again the sober observer cannot fail to notice that new Keynesians have no genuine answers to these questions—they answer them (in the affirmative) by stipulation and by convention.

Speaking now more to the point of monetary theory and policy, Austrian economists certainly agree with the commonplace that money is not neutral in the short run. But they would add that money is *never* neutral, neither in the short nor in the long run, because of the wealth effects that go in hand with any change in the money supply. Monetary policy therefore always has an impact on the economy, irrespective of the question of whether the policy has been anticipated.[2] Its impact on prices is not necessarily proportional, but in any case it *permanently* alters the distribution of wealth among the members of society and thereby affects the prices paid for the various consumers' goods and producers' goods. It makes some ventures profitable and it makes other ventures unprofitable. It creates fortunes and elevated social positions on the one hand, and it destroys wealth and income on the other hand.

The fundamental question we have to confront in the theory of monetary policy is therefore not whether money affects the real economy—yes it does, both in the short run and in the long run—but whether changes of the money supply can make society better off in the aggregate. Austrian economists who follow the approach of Mises and Rothbard believe that it cannot. By contrast, the intellectual edifice of Keynesianism—both old and new—rests squarely on the notion that money does alleviate the problem of scarcity for society as a whole. The entire case for monetary policy is based on the idea that "a decrease of inflation is followed by temporary output losses" (Zimmermann 2003, p. 6). At least in the short run, there is a trade-off between inflation and unemployment.

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[2]This is one of the important points of departure between Austrian economists and their colleagues from the monetarist/real business cycle camp. Both groups believe that the anticipations of market participants can neutralize monetary policy in many respects. For example, if labor unions anticipate inflationary policies, the latter will not reduce unemployment. But the monetarists overstate the role of expectations to the extent that they claim that anticipations nullify any real effects of monetary policy. In their view of the long run, only unanticipated changes of the money supply can have real effects. But this opinion is fallacious because of the existence of wealth effects. For the monetarist position see Patinkin (1965, esp. pp. 50ff.); Barro (1976, pp. 1-32); Lucas (1975, pp. 1113-144); McCallum (1980, pp. 716-46). For a discussion of neutral money from an Austrian point of view, see Mises (1998, pp. 538-40).

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But why should we believe that such a trade-off is more than an accident of history–that is, why should we not believe that a decrease in inflation could with equal probability lead to temporary output *gains*? At this point the new Keynesians essentially repeat the arguments of their predecessors, referring to sticky prices, the Phillips curve, and discontinuous price-settings. But the Phillips curve at the very best is the statistical representation of contingent historical data (Phillips 1958; Fisher 1973). And even if we grant for the sake of argument that it faithfully represents certain historically contingent data, the fact remains that stickiness of prices is no fact of nature such as rainy weather or sunshine, but a variable that depends on political and cultural factors. On a free market, price stickiness is always as low as it can humanly be, and no monetary policy can reduce it further–at any rate as long as labor unions can hire economists trained in (new and old) Keynesian economics (Mises 1931, 1958; Friedman 1968).

Similarly, there is no reason to assume that staggered nominal price setting *per se* induces disequilibria–"fluctuations in output" and "macroeconomic inefficiencies." Contracts are always made for certain periods of time. In more or less many cases, one of the contracting parties may discover after the fact that the price stipulated in the contract was not adequate from his point of view. But how can this be said to be a general social problem? After all, the *other* party usually gains in such a situation, and thus there is no *general* problem. Most importantly, however, it is not at all clear how such problems can possibly be avoided or reduced through manipulations of the money supply. Is it really necessary to repeat all the insights about expectations and the dangers of inflation-induced moral hazard–insights that seem to have made it into large parts of the mainstream these past 30 years?

A final word on the Taylor principle: It does not rule out inflation spirals. Under certain conditions it is not enough to increase interest rates over-proportionally, because even such an over-proportional increase might not be sufficient to offset the other factors that cause an increase in the price level. These conditions seem to hold in many cases (Orphanides 2000). Moreover, and more importantly, the entire focus on inflation targeting and interest-rate targeting in particular is misleading, as Austrians have long been arguing, because bubbles can build up even at stable prices and interest rates.[3]

Monetary theorists are well-advised to regain the habit of discussing policy questions at a fundamental institutional level. It is relevant and useful to raise the question whether we need central banks at all, and why. And it is relevant and useful to compare free-market money with fiat money. Eclipsing such questions from the vary outset might be convenient for those who derive income from the present institutions. But it is a disserve to science, and to society as a whole.

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[3]See Hayek (1931) for example. This insight has made it into mainstream analyses of the current crisis; see for example Borio and Lowe (2002).

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Austrian Monetary Policy Views: A Short Critique

Guido Zimmermann

Austrian business cycle theory is enjoying a comeback because explanations of the recent recession in the U.S. and the current sluggish recovery often have an Austrian flavor (e.g., Laidler 2003; Eichengreen and Mitchener 2003; *Economist* 2002; Oppers 2002). In a nutshell, Austrian business cycle theory postulates that "too low" interest rates induced by monetary policy trigger a credit-financed investment boom–possibly reflected by an asset price bubble[1]–which is unsustainable in the long run so that a subsequent recession not only is unavoidable but necessary to correct imbalances between saving and investment (e.g., Shostak 2002). If the recession is deflationary, there is nothing to worry about due to the stabilizing and welfare-enhancing effects of deflation (e.g., Hülsmann 2003). Policy-wise Austrians recommend the reestablishment of a gold standard to impede monetary policy makers from decreasing short-term interest rates below the natural interest rate which equalizes saving and investment (e.g., Rockwell 2002).

Therefore I want to deal with the following issues from an eclectic, mainstream non-Austrian economics point of view: Should asset price bubbles be pricked by preemptive interest rate hikes? Why should central banks be concerned with deflation? Would a reestablishment of a gold standard be a good thing?

Should Central Banks Prick Asset Price Bubbles?

Yes, I know that Austrians would like to abolish central banks altogether. But we live in the real world and there is a very high probability that central banks will exist in the future. So, should central banks raise interest rates preemptively to prevent the development of an asset price bubble? An Austrian would certainly recommend it (e.g., Sennholz 2002).

During an asset price boom monetary policymakers find themselves in a dilemma (Bordo and Jeanne 2002): If they do not prick the asset price bubble, there is the risk that the boom will be followed by a crash and a credit crunch because decreasing asset prices lead to a decrease in the value of collateral of potential debtors which in turn leads to lower credit lending by banks. In this case a preemptive "strike" in the form of interest-rate hikes would have to be interpreted as an insurance against the risk of a credit crunch. But such an insurance policy against possible future instabilities in the financial sector would imply large costs in terms of ouput losses now. The optimal monetary policy when dealing with asset price developments therefore

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[1]"In principle, a bubble refers to a situation when the price for an asset exceeds its fundamental price by a large margin" (IMF 2003, p. 2 n. 2).

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depends on the relative costs and benefits of this insurance policy. A preemptively tight monetary policy would be optimal if the risk of a crash, including adverse effects on the real side of the economy, is significant and if monetary policy eliminates this risk without large costs. It is a totally different question if and when conditions are given for a preemptive interest-rate hike. In this regard the discussion is not finished yet. Economic literature does not give a definitive answer. Empirical studies are inconclusive (Cecchetti et al. 2000; Goodhart and Hofmann 2002; Bernanke and Gertler 2001; Smith 1999). Right now there is a broad consensus that central banks should not prick asset price bubbles, mainly because bubbles can be detected only *ex post* but not *ex ante* (*Economist* 1999, p. 88).

Why Should Central Banks be Concerned with Deflation?

Except in the Austrian camp (e.g., Hülsmann 2003), deflation certainly does not have a good reputation. Are decreasing prices not something good, though? Sure, decreasing prices for single goods are welcome but not in the aggregate. First, given contractually fixed nominal wages, decreasing price levels lead to higher real wages and thereby lower demand for labor. Second, given nominal interest rates–especially if the lower zero-boundary is reached (remember Japan!)–deflation leads to higher real interest rates compressing demand for capital goods. Third, given that debt is fixed in nominal terms, deflation leads to increasing real debt of firms and households. This deteriorates the balance sheets of firms leading to deflation-induced bankruptcies. Fourth, deflation gives consumers incentives to delay expenditures to benefit from decreasing prices in the future with the result of decreasing sales of firms. Sure, there are also stabilizing effects of falling price levels as Keynes in chapter 19 of his *General Theory* showed. But the overall effect of decreasing prices is ambiguous (e.g., DeLong and Summers 1986). Due to the possible destabilizing effects of deflation there is a broad consensus that deflation has to be fought by central banks via aggressive and preemptive increases in the money supply or interest rate decreases respectively (e.g., Bernanke 2002).

A Reestablishment of a Gold Standard?

It is certainly no exaggeration that Austrians view the introduction of a gold standard as a solution for the boom-and-bust-problem, because credit booms which are held responsible for the boom and the following bust should be less pronounced under this monetary regime (Eichengreen and Mitchener 2003, p. 42). Do the data support this view?[2] The evidence shows that the gold standard before World War I guaranteed no protection against endogenous credit dynamics. Further, there is no firm theoretical basis for the connections between the exchange-rate regime and endogenous credit dynamics. "Our overall conclusion is that the gold standard was neither the cause nor the solution to the credit-boom problem; the effects depended more on how that gold standard was structured and managed" (Eichengreen and Mitchener 2003, p. 47).

Second, there is overwhelming evidence that the Great Depression of the 1930s was initiated by a series of negative aggregate demand shocks (and not malinvestments as Austrians suggest), and that the Great Depression spread worldwide because the gold standard dictated the pursuit of deflationary policies (Eichengreen and Temin 2001; Eichengreen 2002; DeLong 1997). It is for this reason that Eichengreen coined the term "Golden Fetters" for the monetary regime of the gold standard. Vice versa, the road to recovery from the Great Depression was paved by expansionary

[2]"Scepticism about econometric estimates is one thing, and is highly appropriate. But healthy scepticism should not be allowed to devolve into econometric nihilism, which is too often an excuse for wishful thinking and an escape from the discipline of the data" (Blinder 1998, p. 23).

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monetary policy after the abandonment of the gold standard (Eichengreen 1999, pp. 2-3). Although there are also voices in the mainstream arguing for the reintroduction of a gold standard (e.g., Mundell 1997), there is a broad consensus that it is better to live without these golden fetters. Why? DeLong (1996) gives a nice survey of the likely adverse effects of a reestablishment of a gold standard: First, governments would lose their ability to tune their economic policies to fit domestic conditions. Second, under a gold standard, the burden of adjustment is always placed on the countries with a "weak currency." Hence higher average unemployment rates are to be expected under a gold standard than under an alternative monetary regime. Third, the average inflation rate would be determined by gold mining. Thus the inflation rate would be determined by political factors that interrupted the pace of gold mining. Be that as it may—one thing is for sure: possibly, no single currency regime is best for all countries and for all times (Bordo 2003, p. 33) as Austrians want us to believe.

Where Does this Leave Us?

In my opinion there is a reason why Austrian monetary policy views are largely not shared by the mainstream. It is not due to a grand conspiracy against Austrian scholars but due to their monocausal,[3] often ideological-driven economic reasoning. In this context I want to follow Laidler (2003, p. 13): "This is not the place to embark on a detailed critique of the Austrian cycle theory. Suffice it to suggest that its exponents took logical possibilities . . . and treated them as logical necessities." It is perhaps worth quoting the retrospective verdict on Austrian theory and its political nihilism by Robbins (1971), himself a long-time Austrian:

> On the assumption that the original diagnosis of excessive financial ease and mistaken real investment was correct—which is certainly not a settled matter—to treat what developed subsequently in the way which I then thought valid was as unsustainable as denying blankets and stimulants to a drunk who has fallen into an icy pond, on the the grounds that his original problem was overheating. I shall always regard this aspect of my dispute with Keynes as the greatest mistake of my professional career. (Laidler 2003, p. 15)

This does not mean that the Austrian monetary theory of the business cycle has to be totally disregarded:

> When all the over-generalizations are stripped away from Austrian theory, there still remains a hard core insight: namely, that discrepancies between the market and natural rates of interest with a capacity for damaging the real economy can arise even in the absence of inflation. This insight seems to be valid far beyond the Austrian theory's own narrow and ideologically drawn boundaries. (Laidler 2003, p. 19)

I have nothing to add.

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[3]Powell (2002): "Only the Austrian theory . . . provides the explanation [for Japan's recession]."

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AN AUSTRIAN TAXONOMY OF DEFLATION—WITH APPLICATIONS TO THE U.S.

JOSEPH T. SALERNO

Deflation has been all over the news for the last two years. Financial journalists, market pundits, business forecasters, economic columnists, Fed governors and mainstream macroeconomists are all spooked by the specter of price deflation in the U.S. During this time we have been inundated with dire warnings of the looming prospect of a possibly catastrophic deflation in the U.S. Articles bearing such grizzly and creepy titles as "The Deflation Monster Still Lives," "The Specter of Deflation," "Deflation Boogeyman Haunts Fed," "The Greatest Threat Facing the U.S. Economy: Deflation," "Why We Should Fear Deflation," and "Deflation: Making Sure 'It' Doesn't Happen Here" abounded in the financial press and among the publications of such august and stodgy economic think tanks as the American Enterprise Institute and the Brookings Institution.[1] Recently, the International Monetary Fund held an economic forum entitled "Should We Be Worried About 'Deflation'?" to discuss a report it commissioned on the global risks of deflation (Rogoff et al. 2003).

As their titles suggest, these articles delineate chilling scenarios for the American economy. Not only do these and other articles contend that deflation is close at hand but many of them assert or imply two additional propositions: first, that the effects of deflation are an unmitigated disaster for economic activity and welfare; and, second, that the Federal Reserve System needs to take prompt action to head off such impending devastation to the economy. In particular, their authors argue that the Fed must dexterously shift gears and become a deflation-fighter rather than the (supposedly) staunch and valiant inflation-fighter it has been for the last two decades. A few authors even despair of whether the Fed is now constitutionally capable of making such a shift—as if any central bank would be unwilling or unable to create massive quantities of new money for even the lamest excuses.

Most of the growing host of deflation-phobes prudently leaves the precise details of the impending deflationary debacle to our imagination with vague and foreboding references to the Great Depression in the U.S. in the early 1930s or to the experience of Japan since 1998. However, others, such as market pundit Donald L. Luskin, a self-proclaimed "unreconstructed supply-sider," delight in conjuring up lurid deflationary scenarios. According to Luskin (2001), deflation is:

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[1]See, for example, Makin (2001); R. Samuelson (2001); Luskin (2001); DeLong (1999); Rahn (2001); and Bartlett (2001).

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> going to be a world of hurt. If you thought inflation was a nightmare, wait till you live with a deflation. Prices of everything eventually go down—stocks, real estate, wages . . . the whole thing. You're a little poorer every day. . . . And if you're in debt then you're really in trouble. You'll have to make those same mortgage payments even though the value of your house is going down every month. . . . But that doesn't mean that deflation is any bed of roses for lenders either. Sure, it's nice to have locked in a stream of payments in money that will buy you more and more apples and paper clips and houses as prices collapse. But you'll never get the money, because the borrowers will all default. (Luskin 2001)

Regardless of whether they indulge in such rhetorical excesses or whether they dispassionately state their case in formal academic jargon, however, contemporary deflation-phobes fail to analytically distinguish between the mélange of different phenomena that are commonly jumbled together under the current rubric of "deflation." Indeed, academic macroeconomists are the most likely of all to be blind to this conceptual muddle because modern macroeconomics was born of John Maynard Keynes's obsessive deflation-phobia, especially with regard to money wage rates (Keynes 1964, p. 269). As a result they are not inclined or equipped to disentangle and render a coherent account of the separate economic processes designated as "deflationary"; nor are they able to ascertain which kinds of deflationary processes are "benign" and represent an improvement of economic efficiency and welfare and which kinds are "malign" and impair economic productivity and well-being by distorting monetary calculation.

Fortunately, Austrian monetary theory, developed primarily by Ludwig von Mises and Murray N. Rothbard, provides us with the means to cut through the tangle of anti-deflationist fallacies that we have lately been bombarded with and to neatly sort out the different types of deflation.[2] The remainder of the paper is divided as follows. Deflation is defined in section 2. Austrian monetary theory is utilized to identify and analyze the different kinds of deflation in section 3, distinguishing between deflations that are natural and benign tendencies of a progressing free-market economy and deflation that represents a malign intervention into the economy by government and its central bank that severely cripples monetary exchange and calculation. Section 4 contains a critique of the most common fallacies perpetrated by contemporary deflation-phobes. The paper concludes with an analysis of the likelihood that the U.S. economy is or soon will be in the throes of a deflationary recession.

The Definition of Deflation

Before World War II, whenever the terms "inflation" or "deflation" were used in academic discourse or everyday speech, they generally referred to increases or decreases in the stock of money, respectively. A general rise in prices was viewed as one of several consequences of inflation of the money supply; likewise, a decline in overall prices was viewed as one consequence of deflation of the money supply. Under the influence of the Keynesian Revolution of the mid-1930s, however, the meaning of these terms began to change radically. By the 1950s, the definition of inflation as a general rise in prices and of deflation as a general fall in prices became firmly entrenched in academic writings and popular speech. We can ignore here the question of whether or

[2]The *locus classicus* of Austrian monetary theory is Mises's *Theory of Money and Credit* (1980). Mises's more mature statement of monetary theory can be found in *Human Action* (1998, pp. 395-475). Rothbard's comprehensive restatement and elaboration of Misesian monetary theory is contained in his treatise *Man, Economy, and State* (1993, pp. 160-200, 661-764). For two shorter and very lucid treatments of Austrian monetary theory, see Rothbard (1990; 1997, pp. 297-320).

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not this change in usage enhanced conceptual clarity and analytical precision in dealing with monetary problems.[3] The point is that today when professional economists and members of the lay public utter or write the term "deflation," they invariably mean a decline in the overall prices of commodities and services purchased by the "average" consumer as expressed in a price index such as the CPI. Movements in the prices of consumer goods are relevant for identifying the existence and degree of inflation or deflation because consumer goods are the final output and, hence, the rationale of all economic activity. Moreover, as Carl Menger, the founder of Austrian economics has taught us the prices of the myriads of intermediate and original inputs into the production process, broadly categorized as capital goods, labor and natural resources, are ultimately "imputed" via an entrepreneurial market process from the prices of consumer goods. Thus when economists, business forecasters and Alan Greenspan scrutinize indexes of input prices such as the PPI or indexes of raw commodity prices, they do so because they incorrectly believe that changes in these indexes are harbingers of future changes in general consumer prices, as if input prices determined product prices rather than the other way around.

Defined as a general fall in consumer prices, deflation implies an increase in the value or purchasing power of the monetary unit–in the U.S. an increase in the amount of consumer goods that can be purchased for a dollar. Now there are a number of different factors that tend to increase the value of the dollar. These deflationary factors and the processes they initiate may be benign or malign with respect to productive efficiency and consumer welfare, depending on whether they result from the voluntary choices of laborers, capitalists, entrepreneurs, and consumers or the coercive intervention of a government central bank such as the Fed. As we shall see below, while the deflation-phobes have bemoaned the imaginary evils of speculative deflationary scenarios that actually produce net benefits for consumers, they have completely ignored the one kind of deflation that has actually materialized repeatedly in the last two decades and is truly a malign influence on consumer sovereignty and welfare.

Deflation: Good and Bad

According to Austrian theory, the value of money, which is the inverse of overall consumer prices, is determined like the individual prices of its component consumer goods by supply and demand. An increase in the value of a dollar, and a corresponding decline in overall dollar prices, may thus proceed either from an expansion of the demand for or contraction of the supply of money or a combination of both. There are four basic causes of deflation–two operating on the demand side and two on the supply side of the "money relation."[4] The economic processes associated with these factors may be categorized as "growth deflation," "cash-building deflation," "bank credit deflation," and "confiscatory deflation." Each is analyzed in turn below and its effect on economic efficiency and consumer welfare appraised.

Growth Deflation

Let us begin with the demand side. One component of the demand for money is the total quantity of the various commodities and services that sellers supply to the market in exchange for money. The aggregate supplies of goods therefore constitutes

[3]For a discussion of how the meaning of the words inflation and deflation was progressively transformed, see Salerno (1999, pp. 31-33). Mises (1998, pp. 419-21) argues that the modern definition of these terms is inexpedient for the purposes of scientific discourse.

[4]This term was coined by Mises (1998, p. 408) as a shorthand expression for the relation between the supply of and the demand for money.

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what Austrian economists call the "exchange demand" for money, because by selling goods, including their own labor services, people are exercising a demand to acquire and hold money.[5] Hence, if supplies of certain goods in the economy increase due, for example, to increased saving and investment in additional capital goods or to technological progress, as is the usual case in the historical market economy, then, all other things equal, their producers will be induced by competition to offer more units of their product for a dollar. As we are assuming that the supply of dollars remains fixed, the exchange value of a dollar will thus be bid up. This means that on the other side of the market buyers will need to give fewer dollars than previously to obtain a given good and a deflation of prices will ensue.

This is precisely the process that occurred in the past three decades with respect to products of the consumer electronics and high-tech industries, such as hand calculators, video game systems, personal computers, and DVD players. As a consequence of rapid technological improvement and its embodiment in additional capital investments, labor productivity increased phenomenally in these industries driving down per unit costs of production and increasing profit margins. Since the resulting expansion of the supplies of goods forthcoming from these industries outstripped the expansion of the supply of dollars during this period, the effect was a spectacular drop in the prices of high-tech products and a corresponding rise in the dollar's purchasing power in terms of these products. Thus, for example, a mainframe computer sold for $4.7 million in 1970, while today one can purchase a PC that is 20 times faster for less than $1,000 (Cox and Alm 1999a, p. 45). Note that the substantial price deflation in the high-tech industries did not impair and, in fact, facilitated the enormous expansion of profits, productivity and outputs in these industries. This is reflected in the fact that in 1980 computer firms shipped a total of 490,000 PC's while in 1999 their shipments exceeded 43 million units despite the fact that quality-adjusted prices had declined by over 90 percent in the meantime (Cox and Alm 1999b, p. 22).

The price deflation that was observed in the past three decades in selected high-growth industries, however, was not an unprecedented or even unusual occurrence. In fact, historically, the natural tendency in the industrial market economy under a commodity money such as gold has been for general prices to persistently decline as ongoing capital accumulation and advances in industrial techniques led to a continual expansion in the supplies of goods. Thus throughout the nineteenth century and up until World War I, a mild deflationary trend prevailed in the industrialized nations as rapid growth in the supplies of goods outpaced the gradual growth in the money supply that occurred under the classical gold standard. For example, in the U.S. from 1880 to 1896, the wholesale price level fell by about 30 percent, or by 1.75 percent per year, while real income rose by about 85 percent, or around 5 percent per year (Friedman and Schwartz 1960, pp. 94-95). Aside from infrequent discoveries of major new sources of gold, this deflationary trend was only interrupted during periods of major wars, such as the Napoleonic wars in Europe and the American Civil War, which the belligerent governments invariably financed by printing paper fiat money.

In recent years we have seen a continuing growth deflation in China. In the four years from 1998 to 2001, real GDP has increased at an annual average rate of 7.6 percent, while the average of general retail prices have declined in each of those years from 0.8 percent to 3.0 percent (Federal Reserve Bank of Cleveland 2002, p. 10).

Also, it is noteworthy that the fall in the sale prices and average production costs of consumer goods occurring during the growth process does not necessarily entail a

[5]For a discussion of the "exchange demand" as a component of the total demand for money, see Rothbard (1993, p. 662).

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decline in the selling price of labor. If the supply of labor is fixed, money or "nominal" wage rates will remain constant while "real" wage rates rise to reflect the increase in the marginal productivity of and employers' demand for labor as the purchasing power of every dollar earned rises with the decline of consumer prices.

Needless to say, sound economics as well as common sense tells us that the effect of growth deflation on economic activity and consumer welfare is entirely benign, because it is the result of the voluntary exchanges of property titles among resource-owners, capitalist-entrepreneurs, and consumers. These monetary transactions generate a natural increase in the value of money as a necessary complement to the growth of real wealth and income and the greater satisfaction of human wants that they yield.

Cash-Building Deflation

Although a handful of mainstream macroeconomists might be persuaded that price deflation associated with economic growth is benign, they would all scoff at the view that "hoarding," a second factor tending toward price deflation, enhances economic prosperity and well-being.[6] Hoarding occurs when an individual deliberately chooses to reduce his current spending on consumer goods and investment assets below his current income, preferring instead to add the unspent income to his cash balance held in the form of currency and checkable, or otherwise instantly accessible, bank deposits. As such, hoarding is nothing but an increase in what is called the "cash-balance" demand for money, that is, the average amount of money that the individual desires to keep on hand over a period of time. The behavior described by hoarding may be more descriptively labeled "cash building," a term that has the additional virtue of freedom from the negative connotations that burden the word "hoarding."

Cash building usually stems from a more pessimistic or uncertain attitude toward the future caused possibly by the onset of a recession, a natural disaster or the imminent prospect of war. It may even result from speculation on the happy prospect that prices may fall in the near future as a result of economic growth or for other reasons. Under such circumstances, market participants appraise the value of the services yielded by a dollar in hand more highly than before relative to the services of the consumer goods or interest yield on investment goods that can be currently purchased for that dollar. All other things equal, including the number of dollars in existence, this increase in the demand to hold money will result in the bidding up of the market value of the dollar in terms of all goods. A pervasive price deflation will result causing shrinkage of the aggregate flow of dollars spent and received in income per period of time.

Despite the reduction in total dollar income, however, the deflationary process caused by cash building is also benign and productive of greater economic welfare. It is initiated by the voluntary and utility-enhancing choices of some money holders to refrain from exchanging titles to their money assets on the market in the same quantities as they had previously. However, with the supply of dollars fixed, the only way in which this increased demand to hold money can be satisfied is for each dollar to become more valuable, so that the total purchasing power represented by the existing supply of money increases. This is precisely what price deflation accomplishes: an increase in aggregate monetary wealth or the "real" supply of money in order to satisfy those who desire additional cash balances.

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[6]For example, in the 2002 Annual Report of the Federal Reserve Bank of Cleveland (2002, p. 8) we find the following amazing statement: "[T]here are circumstances in which deflation can be a characteristic of a healthy economy–namely, during productivity-driven booms."

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We should note here that the fall in money expenditure that accompanies this process implies a fall in nominal wage rates as well as in consumer goods' prices, although the real wage rate—the amount of goods and services the laborer can purchase with his money wages—remains roughly unchanged. Nevertheless, if there is interference with the free exchange of property titles on the labor market that renders the money price of labor downwardly inflexible, such as minimum wage laws or laws that grant unions exclusive privileges as bargaining agents in particular firms or industries, then unemployment and a decline in economic activity will result. However, the consequent recession or depression does not result from cash-building deflation *per se*, but from the coercive political attempt to impede the exchanges of property titles that lead to the increase in the value of money demanded by consumers.

Bank Credit Deflation

1. Bank Runs

There are also two major factors that have historically operated on the supply of money to produce deflation. The first is a decline in the supply of money that results from a contraction of fractional-reserve bank credit. This may occur either because the banks are called upon by their depositors *en masse* to redeem their notes and demand deposits in cash during financial crises, or because the central bank undertakes a deliberate policy to contract bank credit in order to arrest an inflationary boom in progress or to undo the effects of a previous runaway inflation and restore a depreciated currency to a specie standard. Let us deal with bank runs first.

Before World War II bank runs generally were associated with the onset of recessions and were mainly responsible for the "bank credit deflation" that almost always characterized these recessions. Bank runs typically occurred when depositors lost confidence that banks were able to continue redeeming the titles—represented by bank notes and demand deposits—to the property they had entrusted to the banks for safekeeping and which the banks were contractually obliged to redeem upon demand. This property was usually gold and silver money, and the fractional reserve banks were not in a position to discharge their contractual obligations to all its rightful owners at once because they had created multiple titles to this property in the course of their lending operations. This meant that the outstanding stock of instantaneously redeemable notes and checking and savings deposits were expanded to a large multiple of the commodity money reserves the banks kept on hand. During financial crises, bank runs caused many banks to fail completely and most of their notes and deposits to be revealed for what they essentially were: worthless titles to nonexistent property. In the case of other banks, the threat that their depositors would demand cash payment *en bloc* was sufficient reason to induce them to reduce their lending operations and build up their ratio of specie reserves to note and deposit liabilities in order to stave off failure. These two factors together resulted in a large contraction of the money supply and, given a constant demand for money, a concomitant increase in the value of money.

Once again our judgment must be that deflation, even when caused by a contraction of bank credit amidst numerous bank failures, has a salutary effect on the economy and enhances the welfare of market participants. For it is initiated by a voluntary and contractual redemption of property titles to money by bank depositors who perceive that fractional reserve banks are no longer functioning to safely and securely store their cash balances. When any firm that trades on its trustworthiness, be it a financial services firm, an armored car company, or a law firm, loses the confidence of its customers or clients that it is operating in their best interests, it will be rapidly purged from the market by an adjustment process that reallocates resources

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and improves the welfare of consumers. Bank credit deflation represents just such a benign and purgative market adjustment process.

In fact in the era before the 1930s when the natural flexibility of prices and wage rates prevailed and was not impeded by legal constraints, bank credit deflations in the U.S. were swift and devoid of severe economic dislocations. A brief review of one such episode is instructive.

In the fall of 1839 there occurred a financial crisis in the U.S., which resulted from a massive expansion of the money supply during the 1830s initiated by the legally privileged Second Bank of the United States. From the peak of the business cycle in 1839 to its trough in 1843, the money supply contracted by about one-third (34 percent), almost one-quarter of the nation's banks collapsed (23 percent), including the Bank of the United States, and wholesale prices fell by 42 percent. Despite–or rather because of–the massive deflation of prices, real GNP and real consumption actually increased during this period by 16 percent and 21 percent, respectively. However, real investment did decline during this period by 23 percent, which was a benign development, because the malinvestments of the previous inflationary boom needed to be liquidated.[7] Unfortunately such benign episodes of property retrieval have been forgotten in the wake of the Great Depression. Despite the fact that the bank credit deflation that occurred from 1929 to 1933 was roughly proportional in its impact on the nominal money supply to that of 1839-1843, the rigidity of prices and wage rates induced by the "stabilization" policies of the Hoover and early Roosevelt administrations prevented the deflationary adjustment process from operating to effect the reallocation of resources demanded by property owners. With the free exchange of property titles thus hampered, the economy contracted by roughly one-third and consumption fell by one-fifth during the years from 1929 to 1933.[8]

2. Contractionary or Deflationary Monetary Policy

When national central banks eventually took legal custody of the public's gold deposits, they went beyond their original function of "lender of last resort" during financial crises and assumed discretionary power to manipulate the nation's money supply, that is, to "conduct monetary policy." This occurred in the United States in 1917.[9] As the custodian of the nation's gold reserves, the central bank would on occasion deliberately engineer bank credit deflation in order to avert or mitigate an impending financial crisis provoked by its previous inflationary policy. This "contractionary" or "deflationary"[10] monetary policy was usually invoked after a bank

[7]The data in this paragraph can be found in Temin (1969, pp. 155-65).

[8]For a description of the policies of the Hoover administration that impeded the bank credit deflation and the recession-adjustment process in general, see Rothbard (2000, pp. 209-337).

[9]The Amendment to the Federal Reserve Act of June 21, 1917 mandated that only reserve deposits held at the Federal Reserve banks would be counted as legal reserves of member banks, resulting in a centralization of gold reserves at the Fed (Philips, McManus, and Nelson 1972, pp. 24-25; and Harding 1925, pp. 72-74). As Benjamin Anderson (1979, p. 56) pointed out, the theory underlying this Amendment was "not very clear" but "in 1916 and in early 1917 there was a very definite practical consideration that we might be involved in war, and that it was important that the gold of the country be concentrated in a central reservoir as a basis for war finance." So the centralization of gold reserves in the Fed was undertaken with the definite intention of facilitating an inflationary monetary policy.

[10]In this context we will use these two terms interchangeably to describe a policy-induced reduction or "contraction" of the money supply that results in a fall or "deflation" of prices. The two terms describe aspects of a single economic process that are related as cause and effect or as means and end.

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encouragement of the creation of "unbacked" bank notes and deposits in the first place that is the ultimate cause of the inflationary *and* transitional deflationary problems.

Moreover, the nature and severity of these transitional deflationary problems are too frequently taken for granted and bear closer scrutiny. While a contractionary monetary policy will result in a tendency for the value of money to increase as overall prices decline, this does not present a serious problem in economic theory or history as long as markets are permitted to clear without the interference of political authorities. A case in point is the post-World War I American depression of 1920-21. From 1915 through 1919, the Fed stimulated a massive inflationary bubble. This was partly the result of the reduction of reserve requirements mandated by the Federal Reserve Act of 1913 and partly due to the Fed's efforts to accommodate deficit financing of the huge expenditures associated with World War I and its aftermath.

During this five-year period, the money supply (M2) was increased at an average annual rate of 15.5 percent. Prices as measured by the GNP price deflator rose from 1916 to 1920 by 15.4 percent per annum while the CPI increased by 14.1 percent per annum from 1917 to 1920. The Fed began to recognize the dangerously inflationary nature of its policies in 1919 and raised its discount rate from 4 percent to 4.75 percent in December 1919, to 6 percent in January 1920 and to 7 percent in June 1920, where it held fast until May 1921. The consequence was a steep decline in the annual rate of growth in the money supply to 2.9 percent in 1920 and to -7.5 percent in 1921, causing the GDP deflator to decline by 16.6 percent in 1921 and 8.1 percent in 1922, while the CPI dropped by 10.9 percent in 1921 and 6.3 percent in 1922. Wholesale prices dropped even more precipitously, diving by 36.8 percent in 1921 and plummeting by an incredible 56 percent from mid-1920 to mid-1921. The fall in nominal wage rates was more moderate, but, nonetheless, as one Keynesian observer (Gordon 1974, p. 22) noted, "wage decreases were both general and substantial" and outside of agriculture wage rates fell by nearly 11 percent over the two-year period 1921-1922. Despite–or because of–this massive and broad-based price deflation, however, the economy began to recover by August 1921, 18 months after the downswing had started in January 1920.[11]

Modern commentators on the 1920-21 Depression, to the extent that they have taken note of it, tend to be surprised by its brevity, given the sharp, policy-induced deflation that accompanied it and the extreme reluctance of political and monetary authorities to undertake stimulatory measures to mitigate its severity. One of the leading Keynesian authorities on "business fluctuations," Robert A. Gordon described this depression thusly:

> The downswing . . . was severe . . . but relatively short. Its outstanding feature was the extreme decline in prices. . . . Government policy to moderate the depression and speed recovery was minimal. The Federal Reserve authorities were largely passive. . . . Nor was any use made of fiscal policy. . . . In short, the federal budget was deflationary while the downswing was in progress. . . . Despite the absence of a stimulative government policy, however, recovery was not long delayed. (Gordon 1974, pp. 21-22)

The monetarist macroeconomic historian Kenneth Weiher (1992, p. 34) predictably blamed the Fed for the depression, arguing, "the Fed earned all the criticism it has since received for inaction. In the face of such a severe contraction, accompanied as it was by unprecedented deflation, the Fed did nothing." And yet Weiher

[11]Accounts of the Depression of 1920-21 and the preceding inflationary boom can be found in Weiher (1992, pp. 26-37); Degen, (1987, pp. 30-40); Gordon (1974, pp. 17-23); and Anderson (1979, pp. 61-89).

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(1992, p. 37) appeared to be baffled by the fact that such a Fed-engineered "contraction-deflation of historic proportions" did not lead to total financial and economic ruin and that the economy rapidly and smoothly returned to prosperity. As Weiher (1992, p. 36) was forced to admit: "The Fed was not really called on to act as a lender of last resort to the banking system, because the system never really faced a major liquidity crisis. Why such relative calm persisted compared with the situation in earlier contraction periods is unclear."

If contractionary monetary policy is benign when the central bank exists within the institutional framework of a classical gold standard, how would we evaluate such a policy implemented in a pure fiat money system? For example, the current U.S. dollar is a pure name with no functional link whatsoever to a specific weight of gold or any other market produced commodity. Surely in this system a contraction of the money supply engineered by the Fed is purely arbitrary and cannot be remotely linked to an improvement in social welfare. But this situation is not as simple as it seems and it requires deeper analysis before we can arrive at an informed welfare judgment.

For purposes of argument, let us begin with the assumption that deflation is just as damaging in its economic effects as inflation of equal magnitude. *Ceteris paribus*, that is, in a "stationary" or no-growth economy with a constant demand for cash balances, then, a 3 percent per annum contraction in the stock of fiat dollars should pose no more cause for concern than a 3 percent expansion of the stock of dollars. Economic effects thus placed temporarily to one side, as Hayek courageously warned at the height of the Keynesian era in 1960, political and psychological factors always operate to make monetary inflation much more dangerous than monetary deflation:

> It is, however, rather doubtful whether, from a long-term point of view, deflation is really more harmful than inflation. Indeed, there is a sense in which inflation is infinitely more dangerous and needs to be more carefully guarded against. Of the two errors, it is the one much more likely to be committed. The reason for this is that moderate inflation is generally pleasant while it proceeds, whereas deflation is immediately and acutely painful. . . . The difference between inflation and deflation is that, with the former, the pleasant surprise comes first and the reaction later, while, with the latter, the first effect on business is depressing. There is little need to take precautions against any practice the bad effects of which will be immediately and strongly felt; but there is need for precautions wherever action which is immediately pleasant or relieves temporary difficulties involves much greater harm that will be felt only later. . . . It is particularly dangerous because the harmful aftereffects of even small doses of inflation can be staved off only by larger doses of inflation. Once it has continued for some time, even the prevention of further acceleration will create a situation in which it will be very difficult to avoid a spontaneous deflation. . . . Because inflation is psychologically and politically so much more difficult to prevent than deflation and because it is, at the same time, technically so much more easily prevented, the economist should always stress the dangers of inflation. (Hayek 1972, pp. 330, 332, 333)

Hayek's argument clearly explains why a contractionary monetary policy is never likely to be chosen by a monopoly central bank in a fiat money regime and why, especially under current conditions, fear of deflation is completely groundless. Moreover, granting the premise that we began with regarding the equally pernicious economic effects of inflation and deflation, a case can be made based on Hayek's argument that the central bank should err on the side of deflation, because a mildly deflationary

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monetary policy is far less dangerous in the long run than the mildly inflationary policy of "inflation targeting" recommended by a consensus of contemporary economists.[12] Of course, Hayek himself was opposed to monetary deflation and referred to it as an "error" in the passage quoted above. Nor is it our aim here to construct a case for a particular fiat money policy based on its long-run costs and benefits. Rather it is to challenge the initial premise that the welfare effects of deflationary and inflationary monetary policies are symmetrical by elucidating the purely *economic* advantages yielded by a deliberate reduction of the supply of fiat money–advantages which have been overlooked even by leading Austrian monetary theorists.

Writing in *Human Action* 1949, Mises (1998, pp. 564-65) emphasized the psychological reasons underlying the broad popular appeal of "inflation and expansion" and the even more widespread and violent opposition to "deflation and contraction" in terms very similar to Hayek's. However, in his earlier *Theory of Money and Credit*, which was written before the dread of falling prices had been entrenched and universalized among the public by the Keynesian misinterpretation of the Great Depression, Mises attributed much greater weight in the resistance to monetary contraction to the narrow economic interests of the ruling class or "caste," whose members: (1) control or have access to the funds disbursed by the State; and (2) tend to be debtors rather than creditors. As Mises incisively noted:

> Restrictionism [or "deflationism"] . . . demands positive sacrifices from the national exchequer when it is carried out by the withdrawal of notes from circulation (say through the issuance of interest-bearing bonds or through taxation) and their cancellation; and at the least it demands from it a renunciation of potential income by forbidding the issue of notes at a time when the demand for money is increasing. This alone would suffice to explain why restrictionism has never been able to compete with inflationism. . . . But furthermore . . . an increase in the value of money has not been to the advantage of the ruling classes. Those who get an immediate benefit from such an increase are all those who are entitled to receive fixed sums of money. Creditors gain at the expense of debtors. Taxation, it is true, becomes more burdensome as the value of money rises; but the greater part of the advantage of this is secured, not by the state, but by its creditors. Now policies favoring creditors at the expense of debtors have never been popular. . . . Generally speaking, the class of persons who draw their income exclusively or largely from the interest on capital lent to others has not been particularly numerous or influential at any time in any country. (Mises 1980, pp. 263-64)

Now, like Hayek, Mises (1980, pp. 265-68) opposed a deflationist policy and went on to argue that it was deeply erroneous even in the case in which a country was attempting to revalue its depreciated currency in order to return to the gold standard at the previous mint par, as Great Britain did after both the Napoleonic wars and World War I. To avoid monetary contraction, Mises favored a restoration of gold parity at or near the currently prevailing price of gold. Even Murray Rothbard, although an enthusiastic proponent of bank credit deflation that results from spontaneous bank runs, generally refrained from advocating a deliberate contraction of the money

[12]On inflation targeting, see Bernanke (2003); Bernanke and Mishkin (1997); and Meyer (2001). At an IMF conference recently Laurence Ball (Rogoff et al. 2003, p. 14) advocated an inflation target in the 2 to 4 percent range, proclaiming, "there's absolutely no evidence that that level of inflation has any economic cost we need to worry about." It is noteworthy that in the 1960s "Old" Keynesians such as Paul Samuelson (1967, p. 135) considered rates of inflation of the magnitude aimed at in this New Keynesian monetary policy as "a new disease–a tendency for anything like an approach to full employment to lead to 'creeping inflation.'"

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supply engineered by the central bank under an existing fiat money regime. Thus, he referred to "the crucial British error" and "fateful decision" of returning to the gold standard in the 1920s at the prewar parity. For Rothbard (1990, pp. 94-95), "The sensible thing to do would have been to recognize the facts of reality, the fact of the depreciated pound, franc, mark, etc., and to return to the gold standard at a redefined rate: a rate that would recognize the existing supply of money and price levels." Additionally, in his proposals for the restoration of a 100-percent gold standard in the latter-day United States, a contraction of the supply of fiat dollars is conspicuously eschewed as a transition policy.[13]

Nonetheless, when combined with Mises's explanation of the opposition of the ruling elites to monetary contraction, Rothbard's positive analysis of the distribution effects of deflation reveals the asymmetric welfare effects between monetary expansion and monetary contraction and suggests that the latter policy can indeed play a benign role in the transition back from a fiat to a full-bodied commodity money. According to Rothbard deflationary bank credit contraction:

> in a broad sense, takes away from the original coercive gainers [from credit expansion] and benefits the original coerced losers. While this will certainly not be true in every case, in the broad sense much the same groups will benefit and lose, but in reverse order from that of the redistributive effects of credit expansion. Fixed-income groups, widows and orphans, will gain, and businesses and owners of original factors previously reaping gains from inflation will lose. (1993, p. 865)

Now Rothbard was referring here to the consequences of a bank credit contraction induced by the bank runs occurring during the downswing of a business cycle. But his analysis may be generalized to the case described by Mises above in which the money supply is contracted by the liquidation of central bank notes composing a fiscal surplus. A modern Austrian welfare analysis of this case, which might be called "fiscal deflation," is interesting because it presents a potential route back to a 100-percent gold dollar from our present fiat dollar.

In order to analyze the case within the context of contemporary institutions, it is necessary to provide some technical details of the relationship between the U.S. Treasury and the Fed. The Treasury maintains deposit balances at the Fed and at the commercial banks. The latter are called "tax and loan accounts" and are the temporary abode of funds that it has borrowed and collected in taxes. The Treasury makes its disbursements from its general working balances held at the regional Fed banks. When it needs to replenish the latter, it transfers funds from its tax and loan accounts at the commercial banks. All other things equal, this shifting of Treasury funds from commercial bank deposits to Fed deposits reduces reserves in the commercial banking system and exerts contractionary pressure on the money supply. To avoid this, the Treasury tries to coordinate expenditures from its general working balances at the Fed with drafts on its tax and loan accounts at commercial banks, since the recipients of the Treasury's spending quickly redeposit the funds in commercial banks replenishing bank reserves.[14]

Now, fiscal deflation requires that a portion of the funds collected in tax and loan accounts are transferred to the Fed where they are either cancelled or "spent"

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[13]Rothbard has presented two different proposals for transforming the present U.S. fiat dollar into a 100 percent gold dollar, which are outlined, respectively, in Rothbard (1983, pp. 263-69) and Rothbard (1994, pp. 145-51).

[14]A very clear and comprehensive discussion of the effects of Treasury activities on the money supply can be found in Ranlett (1977, pp. 218-34).

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on programmed increases in required reserves for commercial bank deposits by distributing them on a prorated basis among the reserve deposits held by commercial banks at the Fed. In either case, the money supply would decrease, but we are interested in analyzing the latter case as one possible method of restoring a 100-percent gold dollar.

Let us assume, for example, that the fiat money stock is $1,000, all held in commercial bank demand deposits and that the required reserve ratio is 10 percent. If all banks are fully loaned out, they are holding $100 in required reserves in reserve deposits at the Fed. When the Treasury shifts a surplus of, say, $20 to its general account at the Fed, it will leave the commercial banks with only $80 in reserves and the money supply will eventually shrink by $200 to $800. The Fed will then mandate an increase in the required reserve ratio to 12.5 percent and simultaneously the Treasury will "spend" its surplus funds by transferring them to the reserve deposits of the commercial banks permitting them to meet the new reserve requirement with total bank reserves once again equal to $100 but now supporting only $800 of demand deposits. In the following year, the Treasury again runs a surplus of $20 (which at the new higher purchasing power of money exceeds in real terms the prior year's surplus). Following the same procedure of disposing of the fiscal surplus, the money supply shrinks by another 20 percent, or by $160 to $640, and the Fed raises the required reserve ratio to 100/640 or 15.63 percent. In the next round, again assuming a surplus of $20, the money supply would be contracted by $128 or 20 percent to $512 and the required reserve ratio raised to 19.53 percent.[15] This fiscal deflation of the fiat money stock will continue until demand deposits are backed 100 percent by reserves, at which point the Fed would be abolished and the dollar rendered convertible into gold along the lines suggested by Rothbard (1983, pp. 263-69) to yield a pure gold dollar.

The purpose of the foregoing exercise was not to present an optimal plan for restoring a pure commodity money, but to highlight certain features of a policy of monetary contraction and deflation that are crucial to distinguishing its welfare effects from those of a policy of expansion and inflation. To begin with, almost all current macroeconomics textbooks characterize "seignorage" or "the revenue raised through the printing of money" as an "inflation tax" on money holders that adds to the existing tax burden on the private sector (Mankiw 2003, p. 88). In sharp contrast, because deflationary monetary policy has been considered beyond the pale at least since World War II, it would be difficult to find one modern macroeconomics textbook that recognizes, let alone applies a name to, the opposite effect, which results when the State destroys money via fiscal deflation. Mises and Rothbard, in their respective writings quoted above, generally recognized this effect but failed to name it or to elaborate its welfare implications.

We may identify this effect by the French term *rabattage*, which signifies a diminution or abatement–in this case, of the fiscal burden of government on the private economy. In the fanciful scenario of fiscal deflation outlined above, the *rabattage* effect comes about in the following way. The Treasury is deprived of a part of the funds appropriated through taxation thereby effecting a reduction in government expenditures in both nominal *and* real dollars, because the spending occurs before

[15]The nominal constancy of the fiscal surplus is assumed only for purposes of illustration and is not crucial to the social welfare inferences drawn in the text below. In this case, it assures a 20 percent per annum contraction of the money supply. A much more realistic and mild contraction, say 2 or 3 percent per year, would not change the conclusions of the welfare analysis. It should be noted, however, that a fixed rate of monetary contraction requires a fixed nominal dollar surplus and therefore an increasing real surplus. In contrast, an annually recurring surplus that is constant in real terms will result in a continually declining rate of monetary contraction.

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the increase in the purchasing power of money caused by the fiscal deflation has taken place. Likewise, the recipients of pure transfers from and the suppliers of resources to government suffer an immediate fall in their nominal subsidies and selling prices while the prices of the goods they purchase remain near pre-existing levels, thus causing a decline in their real incomes. *Ceteris paribus*, as these separate spending-and-income chains that emanate from government progress, intersect and reinforce one another throughout the economy, the monetary demands for more and more goods decline and their prices progressively adjust to the reduced stock of money. The final outcome of this deflationary adjustment process is that real income is distributed from the net "tax consumers," that is, the political-bureaucratic establishment and its subsidized constituencies and privileged resource suppliers, back to the taxpayers who originally produced the income in voluntary market activities.

By way of contrast, the seignorage effect of inflationary finance operates to enlarge the real incomes of government and the direct recipients of government largesse and purchases, precisely because these groups gain access to the newly created money at the outset of the inflationary adjustment process. Those who "pay" the seignorage are the receivers of fixed incomes as well as entrepreneurs and resource owners who do not sell to government and are therefore forced to endure progressively rising buying prices until their selling prices rise much later in the process.[16]

In thus altering the configuration of income distribution in favor of taxpayers and to the disadvantage of political tax consumers, the *rabattage* effect of fiscal deflation results in a new structure of consumer demands and pattern of resource pricing and allocation that more accurately reflect the preferences of those who earn income from the production and exchange of goods on the market. From the standpoint of Austrian welfare economics this result represents an improvement in social welfare and economic efficiency because, even if the precise pre-tax pattern of income and wealth distribution is not restored, fewer resources are siphoned off from producers in the social division of labor mitigating the distortion of economic calculation inherent in all government activities.[17] To put it another way, all government interventions have *direct* effects on the utility of the targeted victim or victims and *indirect* effects on monetary calculation and the efficiency of the economy at large, and these effects are analytically separable.[18] Thus the *rabattage* effect, even though it may not restore the pre-intervention wealth and income positions of the original taxpayers, certainly does improve economic efficiency by forcing political tax consumers to disgorge some of the expropriated resources and permitting the market to reallocate productive resources to the service of consumers who earn their livelihood through production for voluntary exchange.[19]

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[16]For Austrians, seignorage is simply the first link in the chain of distribution effects that characterize the inflationary adjustment process. See, for example, Mises (1980, pp. 153-68; 1998, pp. 408-11); Rothbard (1983, pp. 47-53; 1993, pp. 709-12, 850-53).

[17]The case that all government expenditures introduce calculational chaos and economic inefficiencies into the market process that are separate from, and superadded to, the effects of taxation is elaborated in Rothbard (1970, pp. 125-49). See Salerno (1993, pp. 130-31) for the argument that the "preferences and demands" of the participants in the social division of labor "must serve as the sole and ultimate standard of socially efficient resource use" and that the market demands of tax consumers falsify monetary calculation and lead to "a socially inefficient reallocation of productive resources."

[18]For the formulation of this distinction between direct and indirect effects of government intervention and its application in a comprehensive analysis of a myriad of government interventions, see Rothbard (1970).

[19]Mises's argument against monetary contraction because "those who are enriched by the increase in the value of money are not the same as those who were injured by the depreciation

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In light of the *rabattage* effect, the monetary contraction associated with fiscal deflation therefore must be judged as socially benign. In contrast, all other things equal, the seignorage effect is socially malign and destructive of economic efficiency because inflationary finance permits a further appropriation of property by the nonproductive, tax-consuming political sector and a corresponding misallocation of resources. In short, at a given level of taxation, fiscal deflation lightens the fiscal burden on the market economy and diminishes the calculational chaos endemic in government expenditures, whereas inflationary finance intensifies the fiscal burden and promotes the spread of calculational chaos.

There is another effect of fiscal deflation that is socially benign, which has an admittedly narrower application than the *rabattage* effect but is important nonetheless. In the example of fiscal deflation presented above, the monetary contraction involved an ongoing increase in the required reserve ratio toward 100 percent. This deflationary process effectively involves the extinguishing of pseudo property titles to the money commodity, in this case the paper currency embodying the fiat dollar. As argued above, the suppression of fictitious property titles to any commodity ends the distortion of economic calculation and realigns the pattern of productive activities with actual underlying resource scarcities.

It bears reiteration that deflationary monetary policy is not the only, or necessarily the best, route back from a fiat to a commodity-based currency. Nonetheless, it is one such route and it has succeeded historically, e.g., in Great Britain after the Napoleonic wars and in the United States after the Civil War. The latter episode bears particular scrutiny. From the beginning of 1875 until specie payments were resumed on January 1, 1879, the U.S. money stock contracted by about 8.6 percent, as estimated by James Kindahl (1971, p. 475).[20] Yet from 1876 through 1879, real GDP growth averaged a phenomenal 5.20 percent per year, a growth rate that was in excess of 25 percent greater than the average annual growth rate for the period 1876-1913 (Bullard and Hokayem 2003). As a result of the coexistence of monetary contraction and real output growth, during the period 1876-1879 the CPI declined by 3.96 percent per year while the GDP deflator fell at an annual rate of 3.82 percent (Bullard and Hokayem 2003).

The remarkably high rate of real output growth during a period of monetary contraction and declining prices–a period that was identified by the NBER as the longest contraction in U.S. history–even led Friedman and Schwartz (1971, pp. 87-88) to obliquely question the conventionally held relationship between falling prices and real output. Thus, they wrote:

> The contraction [of 1873-1879] was long and it was severe–of that there is no doubt. But the sharp decline in financial magnitudes, so much more obvious and so much better documented than the behavior of a host of poorly measured physical magnitudes, may well have led contemporary observers and later students to overestimate the severity of the contraction and perhaps even its length. Observers of the business scene then, no less then their modern descendants, took it for granted that sharply declining

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of money in the course of the inflation" thus fails because it only takes account of the direct utility effects and ignores the indirect *rabattage* effects (Mises 1980, p. 266).

[20]It is true, as Friedman and Schwartz (1971, p. 82) pointed out, that the decrease in the money stock was not attributable solely to the Treasury's fiscal deflation because both the deposit/reserve and deposit/currency ratios declined as a result of financial crises and bank failures during this period. Nonetheless the stock of "high-powered money" did shrink as the stock of inconvertible greenbacks held as reserves by the banks and currency by the public contracted from $414 million in 1874 to $382 million in 1878 (Kindahl 1971, p. 475).

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> prices were incompatible with sharply rising output. The period deserves much more study than it has received precisely because it seems to run sharply counter to such strongly held views.

We might suggest here that perhaps the *rabattage* effect associated with fiscal deflation and bank failures during this period contributed to this sharp growth spurt of real output. Real resources that had been absorbed in wasteful uses by government or in propping up business malinvestments precipitated by previous bank credit expansion were now released through deflationary *rabattage* to be more efficiently allocated by entrepreneurs responding to the anticipated demands of fellow producers in the social division of labor.

Finally, although our hypothetical example of fiscal deflation above was constructed primarily to highlight the socially benign effects of *rabattage* and the suppression of pseudo titles to money balances, it does point out another social advantage of State money destruction vis-à-vis money creation. Whereas inflationary finance *never* moves us closer to a commodity money and risks hyperinflation and the abolition of money in the bargain should the State's hunger for seignorage revenues exceed certain bounds, fiscal deflation, if carried out properly, conceivably moves the fiat monetary regime back toward its original roots in a market commodity.

Confiscatory Deflation

As suggested above, not all types of deflation are the outcome of benign market processes. There does exist an emphatically malign form of deflation that is coercively imposed by governments and their central banks and that violates property rights, distorts monetary calculation and undermines monetary exchange. It may even catapult an economy back to a primitive state of barter if applied long and relentlessly enough. This form of deflation involves an outright confiscation of people's cash balances by the political and bureaucratic elites. Yet confiscatory deflation has been almost completely ignored by our current deflation-phobes, despite the fact that it has occurred quite a few times in the last two decades–in Brazil, the former Soviet Union, and Argentina in the 1980s, in Ecuador in the late 1990s, and recently again in Argentina. In fact, one of the only economists to identify and condemn confiscatory deflation as a malignant attack on economic efficiency, consumer welfare, and property rights was Murray Rothbard (1995).

Confiscatory deflation is generally inflicted on the economy by the political authorities as a means of obstructing an ongoing bank credit deflation that threatens to liquidate an unsound financial system built on fractional reserve banking. Its essence is an abrogation of bank depositors' property titles to their cash stored in immediately redeemable checking and savings deposits.

A glaring example of confiscatory deflation occurred recently in Argentina. In 1992, after yet another bout of hyperinflation, Argentina pegged its new currency, the peso, to the U.S. dollar at the rate of 1 to 1. In order to maintain this fixed peso/dollar peg, the Argentine central bank pledged to freely exchange dollars for pesos on demand and to back its own liabilities, consisting of peso notes and commercial bank reserve deposits denominated in pesos, almost 100 percent by dollars. Unfortunately this arrangement–which inspired confidence in international lenders because it was approved by the IMF and therefore carried its implicit bailout guarantee–did not prevent a massive and inflationary bank credit expansion. As investment dollars flooded into the country, they found their way into the central bank enabling it to expand the amount of reserves available to the commercial banks. As fractional-reserve institutions, the latter in turn were able to inflate bank credit in concert by multiplying bank deposits on top of each new dollar or peso of reserves. As a result, Argentina's money

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supply (M1) increased at an average rate of 60 percent per year from 1991 through 1994.[21] After declining to less than 5 percent for 1995, the growth rate of the money supply shot up to over 15 percent in 1996 and nearly 20 percent in 1997. (See Appendix 1 for a graph of the growth of Argentine monetary aggregates.) With the peso overvalued as a result of inflated domestic product prices and with foreign investors rapidly losing confidence that the peso would not be devalued, the influx of dollars ceased and the inflationary boom came to a screeching halt in 1998 as the money supply increased by about 1 percent and the economy went into recession. In 1999, money growth turned slightly negative, while in 2000 the money supply contracted by almost 20 percent.

The money supply continued to contract at a double-digit annual rate through June of 2001. In 2001, domestic depositors began to lose confidence in the banking system and a bank credit deflation began in earnest as the system lost 17 percent or $14.5 billion worth of deposits. On Friday, November 30, 2001 alone, between $700 million and $2 billion of deposits–reports varied–were withdrawn from Argentine banks. Even before the Friday bank run, the central bank only possessed $5.5 billion of reserves ultimately backing $70 billion worth of dollar and convertible peso deposits. President Fernando de la Rua and his economy minister, Domingo Cavallo, responded to this situation on Saturday, December 1, announcing a policy that amounted to confiscatory deflation to protect the financial system and maintain the fixed peg to the dollar. Specifically, cash withdrawals from banks were to be limited to $250 per depositor per week for the next 90 days and all overseas cash transfers exceeding $1,000 were to be strictly regulated. Anyone attempting to carry cash out of the country by ship or by plane was to be interdicted. Finally, banks were no longer permitted to issue loans in pesos, only in dollars, but as it turns out this was a futile and desperate ploy to restore confidence in the peso and prevent its depreciation by insinuating that an imminent "dollarization" of the economy was being contemplated. Depositors were still able to access their bank deposits by check or debit card in order to make payments. Still, this policy was a crushing blow to poorer Argentines, who did not possess debit or credit cards and who mainly held bank deposits not accessible by check.

Predictably, Cavallo's malign confiscatory deflation dealt a severe blow to cash businesses and, according to one report, "brought retail trade to a standstill"(Reuters 2001). This worsened the recession, and riots and looting soon broke out that ultimately cost 27 lives and millions of dollars of damage to private businesses. These events caused a state of siege to be declared and eventually forced President de la Rua to resign from his position two years early.

By January 6, 2002 the Argentine government, now under President Eduardo Duhalde and Economy Minister Jorge Remes Lenicov conceded that it could no longer keep the inflated and overvalued peso pegged to the dollar at the rate of 1 to 1 and it devalued the peso by 30 percent to a rate of 1.40 pesos per dollar. Even at this official rate of exchange, however, it appeared the peso was still overvalued because pesos were trading for dollars on the black market at far higher rates. The Argentine government recognized this and instead of permitting the exchange rate to depreciate to a realistic level reflecting the past inflation and current lack of confidence in the peso, it intensified the confiscatory deflation imposed on the economy earlier. It froze all savings accounts above $3,000 for a year, a measure that affected at least one-third of the $67 billion of deposits remaining in the banking system, of which $43.5 billion were denominated in dollars and the remainder in pesos. Depositors who held dollar accounts not exceeding $5,000 would be able to withdraw their cash in 12 monthly

[21]Data on Argentina's money supply are provided by Frank Shostak (2001).

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credit expansion in order to arrest and reverse an outflow of the stock of nationalized gold reserves abroad and to forestall depositors' loss of faith in the banking system that inevitably culminated in the dreaded bank runs discussed above. This policy was implemented at first by raising the discount rate on collateralized central bank loans to commercial banks and later by open market sales of government securities to the public. The result of this policy was a contraction in outstanding bank credit and deposits and a reduction in the overall money supply.

How are we to classify such a deliberate reduction in the money supply by a central bank? Superficially, it appears to be a malign and arbitrary interference in the functioning of the market process on a par with monetary expansion, which misallocates resources and reduces the welfare of property owners. However, in evaluating the policy one must bear in mind the concrete institutional circumstances. A central bank operating within the framework of a gold standard has in effect arrogated to itself the monopoly of warehousing the gold deposits of the public. Its so-called "liabilities" in the form of bank notes and reserve deposits are not money *per se* but merely instantaneously redeemable property titles to the money commodity housed within its vaults. By issuing deposits and notes in excess of its gold reserves, it is creating and multiplying fictitious claims to property that have no counterpart in real goods and that derange market processes and arbitrarily redistribute real wealth and income. The destruction of such pseudo titles to the money commodity is no less a benign development than the eradication of counterfeit titles to any other type of nonexistent property.

Certainly, it is an uncontroversial conclusion of value-free economic analysis that markets work more efficiently in serving consumers when the creation and exchange of counterfeit property titles to stocks of nonmonetary commodities are suppressed. For example, a large and reputable land development and real estate management company may begin contracting for the sale of fully furnished vacation homes in remote locations to more than one buyer, confident that multiple buyers will never occupy the same home simultaneously. Nevertheless this practice would still alter prices in this and related markets and alter the distribution of income and wealth and the structure of consumer demands throughout the economy. The discovery and elimination of this scam would reorient prices and quantities to more accurately reflect the scarcities of concrete goods. Hence, the economist would remain strictly within the bounds of *Wertfreiheit* in appraising this new constellation of market outcomes as superior to the old in terms of social welfare. Similarly, in carrying out a contractionary monetary policy, the central bank is merely ceasing to violate its contractual obligation to maintain the integrity of its depositors' titles to their stored money balances, and, therefore, the consequent readjustment of the purchasing power of money to the real scarcity of the money commodity implies a value-neutral judgment that social welfare has been enhanced.

Some will object that the economic distortions caused by monetary expansion occur when the new money is injected into the economy, so that a subsequent monetary contraction is unnecessary and only burdens the economy with further distortions. However, this objection does not take into account the fact that deflationary monetary policy has generally been implemented while the economy is still undergoing an inflationary boom and, therefore, operates to counteract and reverse the tendencies to malinvestment and arbitrary wealth redistribution that have not yet been consummated. In addition, and more importantly, any economic dislocations that may occur during deflation are the inevitable concomitant of a transition process back toward the original regime of pure commodity money. Given the historical market process in which it evolved, this regime is demonstrably consistent with the preferences of property owners and the mutually beneficial exchanges of genuine property titles that improve *ex ante* social welfare. It is the central bank's facilitating and

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installments starting one year in the future, while those maintaining larger dollar deposits would not be able to begin cashing out until September 2003 and then only in installments spread over two years. Peso deposits, which had already lost one-third of their dollar value since the first freeze had been mandated and faced possible further devaluation, would be treated more liberally. They would be paid out to their owners starting in two months but this repayment would also proceed in installments. In the meantime, as one observer put it, "bank transactions as simple as cashing a paycheck or paying a credit card bill remained out of reach of ordinary Argentines" (Rohter 2002).

Mr. Lenicov openly admitted that this latest round of confiscatory deflation was a device for protecting the inherently bankrupt fractional reserve system, declaring, "If the banks go bust nobody gets their deposits back. The money on hand is not enough to pay back all depositors" (quoted in Rohter 2002). Unlike the bank credit deflation that Lenicov was so eager to prevent, which would have permitted monetary exchange to proceed with a smaller number of more valuable pesos, confiscatory deflation tends to abolish monetary exchange and propels the economy back to grossly inefficient and primitive conditions of barter and self-sufficient production that undermine the social division of labor.

Indeed, the regime of confiscatory deflation was beginning to "demonetize" the Argentine economy by the end of 2002. Corn, soybeans, sunflowers, and wheat had reportedly "become a preferred legal tender in Argentina, often more welcome than cash, because they are priced in dollars." Automobile sales had fallen by 61 percent in 2002 and rural dealerships began bartering for grain contracts, called *trueques*, to stay afloat. Ford Motor Company, General Motors, and Toyota Motor implemented countrywide sales pitches and programs to teach their employees how to trade vehicles for grain. In Rosario, the grain capital of Argentina, the Ford dealership swapped 50 cars for grain in a three-month period. DaimlerChrysler introduced a "Grain Plan" which permitted Argentine customers to use grain to purchase Mercedes-Benz, Chrysler, Jeep, and Dodge vehicles. A farm equipment maker swapped $9.5 million of farm machinery for corn, sorghum, soybeans, and wheat and bought Toyota pickup trucks for its fleet with some of the grain received. Even a few insurance companies were considering plans to accept premiums in grain. Predictably, farmers began withholding some of their product, in effect treating grain hoarded in their silos as cash balances. Thus 25 percent of the soybean crop went unsold in 2002 compared to only 10 percent the previous year.[22]

Interestingly, many of the deflation-phobes in academia, the media, and supranational bureaucracies hailed the Argentine confiscatory deflation as a responsible "austerity measure," turning a blind eye to its devastating economic effects. This is unfortunate because there exists an effective and benign deflationary remedy that would solve the problem. The solution is for the Argentine government to recognize and adjust its policy to the reality of property–and the reality is that bank deposits are no longer (and really never were) par value property titles to fixed quantities of pesos and dollars. These currencies do not exist in the fractional-reserve banking system in anywhere near the quantities needed to pay off depositors. In economic reality, a bank's deposits are a claim on its loan and investment portfolio, including its cash reserve. Therefore, every bank in Argentina should be immediately handed over to its depositors, that is, transformed into a managed mutual fund. The ownership titles or "equity shares" in each mutual fund would be prorated among the former depositors in accordance with their share of the predecessor institution's deposit balances. The result would be a bank credit deflation that would result in a one-shot,

[22]The examples cited in this paragraph may be found in Moore (2002).

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swift and sharp contraction of the money supply down to the level of the monetary base, which is equal to the amounts of peso and dollar currencies held by the public plus the peso and dollar reserves held by the banks. While nominal prices and wage rates would have to be readjusted sharply downward, the value of the peso would rise commensurately, monetary exchange and calculation would be restored, and the allocation of resources and distribution of property titles would once again be determined by market processes.[23]

Deflation Fallacies

While blithely ignoring coercive political expropriation of the public's bank deposits, deflation-phobes exhibit an obsessive and misplaced concern with voluntary, market-driven deflation. Although deflation-phobia ranges across the spectrum of current schools of macroeconomic thought, the most numerous and vociferous group of contemporary deflation-phobes consists of the financial journalists, economic consultants, market pundits and conservative think-tank policy wonks who are more or less closely linked with supply-side economics. Donald L. Luskin, Bruce Bartlett, Richard Rahn, and Larry Kudlow are some of the supply-siders who have weighed in with anti-deflationist articles. The supply-side anti-deflation program can be boiled down to three basic propositions, each of which rests on fallacious assumptions.

The first proposition is that the prices of gold and other raw commodities are extremely sensitive to changes in monetary conditions and are therefore good predictors of future movements of general consumer goods' prices, which tend to respond much more slowly to such changes. As Bruce Bartlett (2001) wrote, "When one sees a sustained fall in sensitive commodity prices–those that lead changes in the general price level–one can predict that eventually this trend will work its way through the economy as a whole." According to Rahn (2001), since all major commodity indexes had fallen by double-digit percentages during 2001 and many commodity prices had fallen well below their levels of 10 years earlier, a deflation, possibly as severe as Japan's, loomed. The declines in CPI and PPI indexes in the fourth quarter of 2001 supposedly represented the first whiff of this onrushing deflation.

The fallacious assumption underlying this proposition is that there always exists a positive relationship between movements in raw commodity prices and movements in consumer prices. However, as the Austrian theory of the business cycle teaches, consumer goods' prices and capital goods', including raw commodity, prices change relative to one another during the different phases of the cycle and may very well vary in absolutely opposite directions during a recession.

Since World War II recessions have generally been precipitated by the Fed *reducing the rate of growth* of bank reserves and hence of the money supply, rather than absolutely contracting bank reserves and money. All other things equal, the immediate result is a reduction in the creation of bank credit, which leads directly to a higher interest rate that discourages business borrowing for investment projects. The subsequent constriction of investment spending causes the prices of capital goods to begin to fall both absolutely and relative to consumer goods' prices. The latter are generally still increasing at the start of recessions under the pressure of past injections of new money that reaches consumers only after it has been spent by business investors. As profits in the capital goods industries turn negative and profit prospects for planned and partly finished investment projects in these industries are suddenly dimmed, the demand for raw industrial commodities and other inputs specific to the production of capital goods declines precipitously and their prices plunge even further. Shaky

[23]For more detail on this proposal, see Salerno (2002). Bernstam and Rabushka (2002) propose a similar plan to reform Russia's banking system.

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capital goods' firms also scramble to acquire cash and stave off financial default and bankruptcy by liquidating their inventories of highly marketable industrial commodities, and this puts additional downward pressure on industrial commodity prices.

Meanwhile, because the Fed has typically continued to expand bank credit and money during postwar recessions, although at a slower pace, the prices of consumer goods never do stop rising as the persistent injections of new money from "monetized" government deficits and more slowly growing bank loans and investments work their way through the economy to consumers. This vital lesson was illustrated time and again in the series of inflationary recessions or "stagflations" that the U.S. has suffered through since 1969 during which the prices of consumer goods rose without interruption right through the recession phase of the cycle despite plunging commodity prices.

Unfortunately the supply-siders have never learned this lesson taught by theory and history, although they might have had they paid more attention to Murray Rothbard. Writing in an earlier era of deflation-phobia, the mid-1980s, Rothbard gave a definitive response to those, including supply-siders, who claimed then that a fall in a handful of industrial commodity prices presaged a general deflation:

> The fact that industrial commodity prices have fallen sharply means precisely nothing for the reality or the prospect of inflation or deflation. Industrial commodity prices *always* fall in recessions. They fell in the steep 1973-74 recession and they fell very sharply throughout [the recessions of] 1980 and 1981. . . . What was the impact of commodity prices on inflation or deflation? Precisely zero. The point is that consumer prices kept rising anyway, throughout these recessions and through the generally depressed period from 1980 to 1983. . . . Most laymen and economists think of industrial commodity or wholesale prices as harbingers of the move of consumer prices, which are supposed to be "sticky" but moving in the same direction. But they are wrong. One of the most important and neglected truths of business cycle analysis is that consumer prices and capital goods or producer prices move in different directions. Specifically, in boom periods capital goods or producer prices rise relative to consumer prices, while in recessions, consumer prices rise relative to producer prices. As a result, the fact that industrial commodity prices have been falling in no sense presages a later fall in consumer prices. Quite the contrary. (Rothbard 1984, p. 2)

The second proposal of the supply-side program relates to the proper role of the Fed in averting this deflation. As Luskin colorfully described this role,

> The job of the Fed is to play a monetary Goldilocks—to provide just the right amount of money in the economy. The right amount isn't some arbitrary level of M1 or M2 or some other so-called measure of the money supply. In fact the supply of money is like any other supply—the supply of apples or the supply of paper clips—the "right" amount is the amount that satisfies demand. . . . So as the demand for money fluctuates, and as the economy's need to use it for transactions fluctuates, the job of the Goldilocks Fed is to supply just the right amount of money to keep the price of money constant. (Luskin 2001)

Now, first of all Luskin has—quite inadvertently to be sure—hit on a perfect analogy for the Fed. In fact Goldilocks surreptitiously redistributed property from a hapless and unsuspecting family of bears to herself, offering no property in exchange for the food and shelter she wantonly expropriated. This is precisely what occurs when the Fed creates new fiat money for whatever reason: the first recipients of this newly-created money, whether they be the government and its subsidized constituencies or

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banks lending newly-created dollars and their client firms borrowing at artificially low interest rates, are able to acquire titles to real property without the necessity of having first produced and exchanged property on the market. The result is a concealed and arbitrary redistribution of real income and wealth in favor of those who receive and spend the new money before prices have risen at the expense of firms and laborers whose selling prices and wage rates rise only after a lapse of time during which most of the prices of the things they purchase have already risen. Even if the Fed were to create just enough additional money to offset a growth deflation and maintain consumer prices roughly unchanged, it would still be distorting the market's distribution of property in favor of those who were immediate recipients of the monetary injection and were able to take advantage of the falling prices. Belated recipients of the new money and, especially, people living on fixed money incomes would have to purchase at unchanged prices and would thereby be deprived of the share of extra real income that would have accrued to them had consumer prices been permitted to fall in line with increased productivity.

Another fallacy embedded in the Fed-as-Goldilocks analogy relates to Luskin's misconception of the role of the pricing process in ensuring that the optimal quantities of goods are produced. It is incorrect to assert, as Luskin does, that the "right" amount of any good, such as paper clips or apples, is the amount that satisfies demand at the previously existing price. In fact, as we saw above with respect to the computer industry, the optimal quantity of PC's is determined by the profit maximizing decisions of competing firms in the industry. When productivity is growing rapidly and per unit costs declining rapidly, the attempt to maximize prospective profit results in an excess supply of the good at the previous market price. The free market ensures that the price then falls to once again precisely adjust the quantity supplied to the quantity demanded. In other words, from moment to moment, it is *the continual variation of prices* that ensures that the "right" quantity of any good is always supplied; the market economy does not operate to assure that the supply will always vary to perfectly satisfy demand at a price that is previously fixed once and for all. And it is just so for the money supply: if an excess demand for money emerges as a result of economic growth, the market phenomenon of growth deflation will ensure that the purchasing power of money rises producing an increase in aggregate monetary wealth that exactly satisfies the extra demand. A Goldilocks Fed continually varying the money supply to maintain the purchasing power of money forever constant–even if it could be trusted to do so–is just as nonoptimal as computer firms supplying only the number of PC's that pegs their price at, let us say, the 1980 level.

Finally, it should be pointed out that Hayek (1969) brilliantly demolished the argument in favor of a Goldilocks central bank put forth by a much earlier and more distinguished generation of deflation-phobes in the late 1920s.[24] Although Hayek (1969, pp. 253-54) never used the term "deflation-phobes," he did refer to "the victims of that uncritical fear of any kind of fall in prices which is so widespread to-day, and which lends a cloak to all the more refined forms of inflationism"–a perfect characterization of contemporary deflation-phobes. In his critique, which was based on Austrian business cycle theory, Hayek pointed out that any attempt by the central bank to stabilize the price level of consumer goods by increasing the quantity of money during a period of rapid technological progress and capital investment inevitably drives the interest rate down below the level that equates the supply of voluntary savings with

[24]Hayek's seminal article, "The Paradox of Saving" (1969), was originally published in German in 1929 and first appeared in English in 1931, effectively refuting Keynes's "deficiency of aggregate demand" and "paradox of thrift" arguments at least half-a-decade in advance in the two most important scientific languages of the time.

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the business demand for investment funds. This gap is filled by the evanescent "forced savings" embodied in the newly created money that the central bank injects into credit markets. Once the bank credit expansion ceases or slows down, however, the forced savings vanish and the interest rate re-attains the higher level consistent with the intertemporal consumption preferences of consumers. In the meantime the artificial reduction of the interest rate falsifies the profit calculations of entrepreneurs and distorts their investment decisions, generating an unsustainable real investment boom–or "bubble" in contemporary jargon–followed inevitably by a bust when the interest rate rises again. It is during the recession that the cluster of malinvestments is revealed and liquidated and the production of capital and consumer goods is readjusted to the quantity of voluntary savings. Hayek concluded with the warning that any attempt to obstruct the benign deflationary process that accompanies economic growth by manipulating the quantity of money paradoxically leads to the very economic collapse that deflation-phobes of every era are so desperate to avoid:

> So long as the volume of money in circulation is continually changing, we cannot get rid of industrial fluctuations. In particular, every monetary policy which aims at stabilizing the value of money and involves, therefore, an increase of its supply with every increase of production, must bring about those very fluctuations which it is trying to prevent. (Hayek 1969, pp. 262-63)

The third and final component in the supply-siders' anti-deflation program is to formulate a rule to guide the Fed in performing its Goldilocks role. This rule is a price-level rule that focuses on–what else–sensitive commodity prices. According to Rahn,

> the Fed needs to say explicitly that it is adopting price-level targeting again, and that it is going to look at sensitive commodity prices as the indicator of where prices are headed rather than the CPI and other lagging indicators. The Fed should look at a market basket of commodities; if prices in the basket rise above a predetermined range, the Fed reduces the money supply and vice versa. (Rahn 2001)

Unfortunately, this rule may at times operate to promote a massive inflation, because as we saw above, industrial commodity prices and consumer prices move in opposite directions during periods of recession and financial crisis. Following this rule the Fed may very well accelerate an already high growth rate of the money supply and intensify inflation in the U.S. while reacting to a precipitous decline in industrial commodity prices caused, for example, by foreign financial crises like those that struck in Asia in 1997 and 1998. For example, the DJ-AIG Commodity Index in early February 2002 stood 10 percent below its level in 1991, and nearly 20 percent below its level of one year before, despite the fact that the monetary aggregate MZM (for "money of zero maturity") grew by 15.8 percent and AMS (for Austrian money supply) grew by 12.3 percent in 2001.[25] In these circumstances, if the Fed had heeded the advice of the supply-siders, who all purport to be unconcerned by the rate of growth of the money supply, and immediately ratcheted up money growth from its already high rate to a rate sufficient to rapidly increase commodity prices by 10 to 20

[25]Unless otherwise noted the statistics cited in this paper have been computed from data available in the Federal Reserve Economic Data (FRED) database on the Internet at www.stls.frb.org/fred2. The DJ-AIG Commodity Index can be found in Dow Jones and Company, Inc. 2002. The AMS aggregate is computed by Frank Shostak. For a description and justification of the AMS aggregate see Salerno (1987).

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percent, they would have set the stage for a hyperinflation. This would all have been in the name of averting a deflation whose only evidence was a small isolated decline in the fourth quarter 2001 CPI (-0.6 percent on an annualized basis) during a year in which the CPI rose 1.8 percent and the median CPI increased 3.9 percent.[26] Of course the feared deflation never materialized as the CPI climbed by 2.2 percent and the median CPI by 3.0 percent in 2002.

As noted above the supply-siders are by no means the only current macroeconomists afflicted with deflation-phobia. Recently, the *doyen* of monetarism, Milton Friedman (2002), wrote "the current rate of monetary growth of more than 10% is sustainable and perhaps even desirable as a defense against contraction and in reaction to the events of Sept. 11."[27] Also, the moderate Keynesian John H. Makin (2001), an economist associated with the establishment Republican think tank, the American Enterprise Institute, recently referred to the current recession as a "deflationary one" on the basis of the substantial fall in the October 2001 PPI index and the decline in one-year inflation expectations from September to November 2001. Makin went on to argue,

> the Fed has no choice but to race to cut short-term interest rates faster than inflation and inflation expectations are falling. . . . After all, combating recession, especially this deflationary one, requires a real Fed funds rate of zero, and with expected inflation of 1 percent or below, a 1 percent nominal Fed funds rate is necessary to push real rates down to zero. (Makin 2002)

So fearful was Makin that even zero short-term real rates alone would be insufficient to arrest and reverse this imagined deflationary recession that he also advocated that President Bush's fiscal stimulus package be increased in size and that the Democrats be invited in on the spending boondoggle. According to Makin (2002), the President "should suggest that the package be enlarged to $200 billion, with the Democrats allowed to specify $100 billion worth of their favorite spending increases while Republicans can specify $100 billion worth of their favorite tax cuts."

The number of deflation fallacies is legion and in this section we have dealt only with some of the grosser fallacies that are current in order to illustrate the relevance of the Austrian taxonomy of deflation. A much more subtle, but no less specious, argument for fearing deflation, specifically anticipated deflation, is a staple of almost all recent writings on deflation by academic macroeconomists and is implicit in Makin's remarks quoted in the preceding paragraph. According to this argument,

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[26]The median CPI was developed by economists Michael F. Bryan and Stephen G. Cecchetti and is calculated by the Federal Reserve Bank of Cleveland. A short description of the aggregate and its rationale and its time series can be found in Federal Reserve Bank of Cleveland (2003). From the Austrian perspective, this statistic gives a far better "understanding" of fluctuations in the purchasing power of money because it is less aggregative than the standard CPI index and is more consistent with the Austrian notion of a "swarm" of individual and particular prices rising and falling together while constantly changing positions relative to one another. The metaphor of a bee swarm whose overall variations in altitude are reflected to different degrees in each of its individual members is sharply opposed to the metaphor of a "price level" uniformly changing like the level of a body of water, a misleading metaphor that has been entrenched in mainstream monetary thought at least since Irving Fisher's writings in the early twentieth century.

[27]To be fair, Friedman (2002) did add the caveat, "continuation of anything like that rate of monetary growth will ensure that inflation rears its ugly head once again."

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"The root reason to fear deflation is that the nominal interest rate is bounded below by zero" (DeLong 1999). It would take us too far afield to address this argument in detail here. Suffice it to say, however, that this argument involves a fundamental misfocus on the "loanable funds" market as the basic determinant of the real rate of interest and completely ignores the fact that the loan rate is a mere epiphenomenon of the "natural" rate of interest or the uniform rate of price spreads between inputs and outputs. The latter constitutes the time-preference return to capitalist investment in all processes and stages of the integrated production structure. *Ceteris paribus*, any general anticipation of a rise in the purchasing power of money therefore will immediately be reflected in lowered entrepreneurial bids for and prices of inputs which will instantaneously re-establish the pre-existing nominal (and real) rate of return on investment and therefore on funds loaned to investing capitalist-entrepreneurs.[28]

Conclusion: The Prospect for Deflation in the U.S.

So what is the prospect for an imminent deflation in the U.S.–for an actual sustained fall in consumer prices–that so terrifies so many contemporary macroeconomic analysts and forecasters? The answers derived from our theoretical analysis of deflation above are: practically none. Year-over-year growth in real GDP for 2001 was a measly 0.1 percent, not surprising for a recession year, and 2.9 percent for 2002. The recovery has slowed down substantially the last quarter of 2002 and first quarter of 2003, with real GDP growing at an annualized rate of 1.4 percent in both quarters. As a slow recovery is widely expected to continue through 2003, this implies that the factor of growth deflation will be negligible for awhile.

There does exist some evidence that a cash-building deflation process is operating. The ratio of total nominal income from current production as quantified in the nominal GDP aggregate (NGDP) to the money supply as defined by AMS, fell by 6.5 percent, from 6.48 in the 4th quarter of 2000 to 6.06 in the 4th quarter of 2001. The NGDP/AMS ratio fell by a further 2.3 percent in 2002 before increasing slightly by 0.7 percent in the first quarter of 2003. The NGDP/MZM ratio fell by 15.7 percent in 2001, followed by a 3.9 percent decline in 2002. The ratio stabilized in the first quarter of 2003. This indicates that during the recession and early stages of the halting recovery people were devoting a greater part of their income to holding cash balances, which generally occurs as a result of the greater uncertainty and pessimism that a recession and related financial collapses, such as the Enron debacle, introduces into their future income prospects. The higher value placed on ready cash relative to other opportunities for disposing of money places a downward pressure on the prices of consumer goods. This is a short-term phenomenon, however, and tends to reverse itself as recession nears an end and perceived income prospects brighten, as appears to be the case in 2003.

This brings us to the supply side of the money relation. During 2000, the AMS aggregate actually contracted by 1.29 percent after having risen by an annual average rate of 6.47 percent in the previous three years. After growing by an average of 12 percent per year in 1998 and 1999, the MZM grew by 8 percent in 2000. (See Appendix 2 for graphs of the growth of U.S. monetary aggregates.) There is no doubt that this sudden decline in monetary growth precipitated the current recession. However, the

[28]For a critique of the argument that a premium (discount) on the nominal interest rate results from anticipated inflation (deflation) in order to maintain the real rate, see Rothbard (1993, pp. 693-98).

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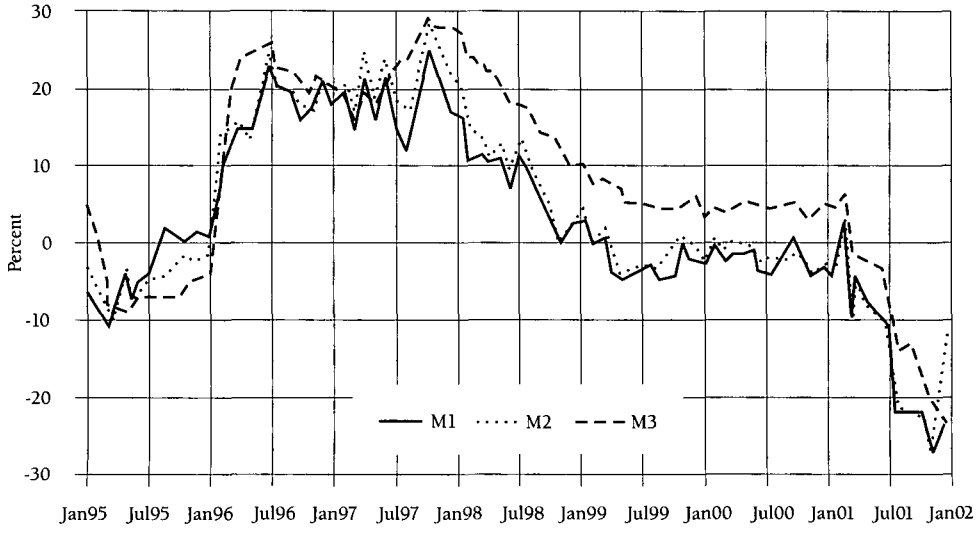
Fed's aggressive rate cutting in 2001 resulted in explosive growth in the money supply in 2001, with AMS growing by 12.33 percent and MZM by 15.78 percent. Monetary expansion slowed somewhat in 2002 but still continued at a rapid pace with AMS increasing by 6.38 percent and MZM by 12.78 percent. In the first six months of 2003, AMS has grown at an annual rate of 4.22 percent–but at a 12 percent annual rate in the final four months of this period–while MZM has risen at an annual rate of 6.56 percent, and by nearly 8 percent per year in the final four months. So any deflationary tendency proceeding from the relatively tight monetary policy in 2000 and the large increase in the demand for money during 2001 has since been swamped by the Fed's reversion to a massively expansionary money policy.

Finally there is no evidence that Americans are losing confidence in the banking system and poised to set off a much-needed purgative bank credit deflation à la Argentina. The currency/checkable deposit ratio rose very slightly in 2001 from 0.96 to 0.98, implying that there was a slight net withdrawal of currency from the banks by depositors. And even if a bank run did develop in the event that the fragile recovery failed and the economy plunged into a double-dip recession featuring additional high profile collapses among American corporations and financial institutions, there is very little probability that the Greenspan Fed would allow it to run its natural course. The Fed would sooner impose a "bank holiday," that is, an Argentine-style confiscatory deflation, to buy time in order to orchestrate a massive inflationary bailout of the financial system.

Whether the current recovery will strengthen, which appears to be the prevailing consensus, or whether unforeseen events in the financial arena abort it prematurely, we will see a hefty rise in consumer prices in the next few years. In other words, an existing or imminent deflation in the U.S. is a chimera conjured up by those unfamiliar with sound, Austrian monetary theory.

Appendix 1:
Argentine Monetary Growth



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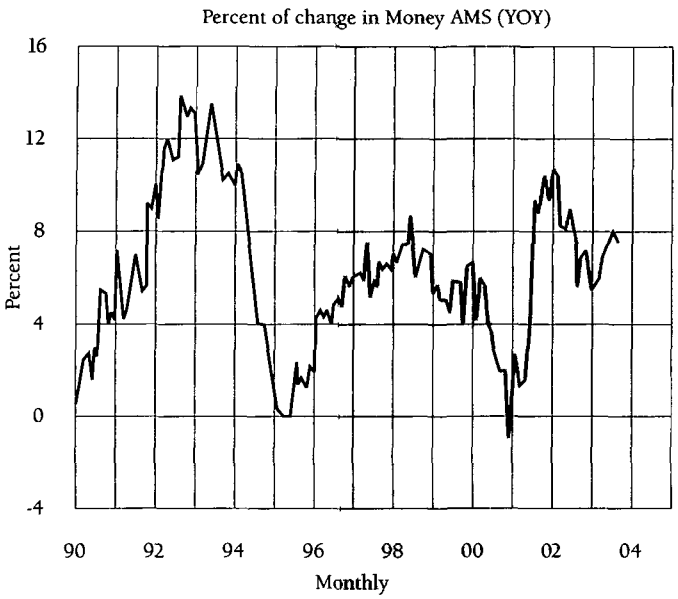
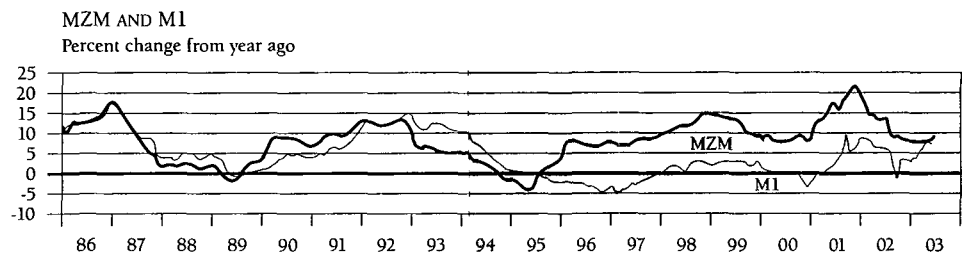
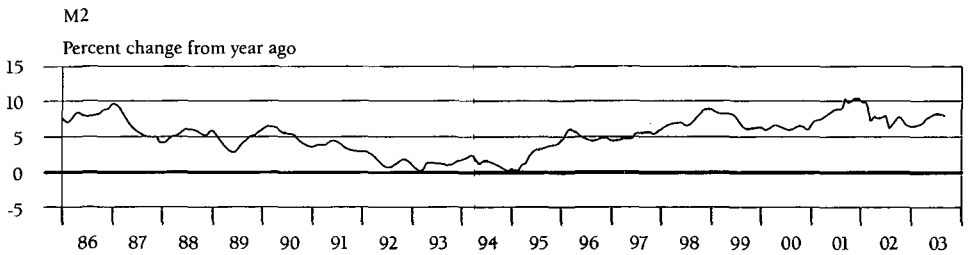
APPENDIX 2:
U.S. MONETARY GROWTH



Source: Prepared by Frank Shostak of Man Financial Australia, Ltd.

MONETARY TRENDS





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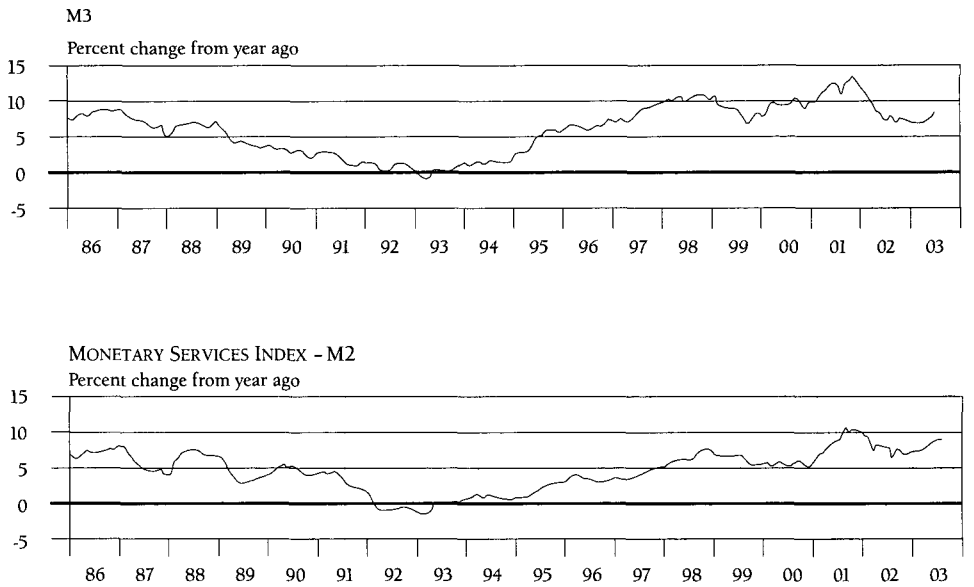

Source: Federal Reserve Bank of St. Louis *Monetary Trends* (August 2003): 4. Available at www.stls.frb.org/fred.

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AUSTRIA IN THE TWENTIETH CENTURY

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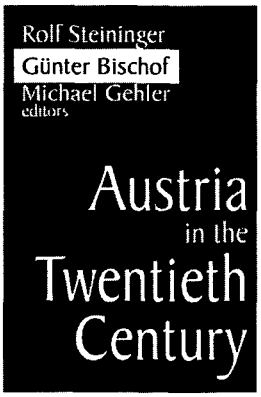

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Deflation Teaser? Klondike Bars and the Golden 90s in Canada

Mark Thornton

> For both historians and macroeconomists this period is a teaser. For macroeconomists the period provides a rare opportunity to study a secular deflation. For historians the causes of both underperformance of the economy in the early years and the boom in the second half of the period are somewhat puzzling. For both groups the fundamental question concerns the relationship between the real and the nominal performance of the economy. Was there causation or merely correlation? (Bordo and Redish 2003, p. 2)

> The migration of technique from the United States proceeded along blazed trails with cumulative intensity. The northward spread of placer mining on the Pacific coast was followed by the discovery of gold in the Yukon and the economic cyclone of the Klondike gold rush. Population and capital poured in from the United States and ushered into what was heralded as her [Canada] century. (Innis 1956, p. 167)

Deflation has become all the rage in the economics profession and financial media. Some economists have suggested that deflation is a largely benign phenomenon, even beneficial, but the bulk of opinion reports that deflation is something to be feared because it can bring, in its wake, economic depression. This fear can even be described as a phobia (Thornton 2003; appearing earlier in this issue). This fear is based on, for example, the economic problems in Japan since 1989 and the experience of the Great Depression. As a consequence, economists have turned their attention from inflation to deflation.

Michael Bordo and Angela Redish examined the question of whether or not deflation causes economic depression by examining evidence from the United States and Canada during the period of the classical gold standard 1870-1913 (Bordo and Redish 2003). They find that deflation was not necessarily related to depression or economic decline. However, they do find an anomaly in that "positive monetary shocks" in Canada during the latter half of the classical gold standard period did indeed have a positive impact on national output. While this is not necessarily a strike against deflation *per se*, it does suggest the possibility that "inflation" has the potential to beneficially impact economic growth.

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This anomaly is what Bordo and Redish label a "teaser." They offer several possible explanations for this discrepancy, but ultimately place the answer in the bin of future research. Others, including Jeffrey Williamson, also do not provide an explanation for the increased growth rates after 1896.[1] This anomaly is explained here by acknowledging that the increase in the Canadian money supply and the increase in Canadian economic output were in fact the same thing–a rapid expansion of gold mining production in Canada after 1896 associated with the Klondike gold discovery. Economic activity associated with the production of gold bars from the Klondike is what helped make this period the Golden 90s in Canada.

Is Deflation Depressing?

Bordo and Redish examine the question of whether or not deflation leads to depression by examining the evidence from the U.S. and Canada during the period of the classical gold standard (1870s-1913). The first two decades of this period were generally characterized by deflation of prices while the second two decades were generally characterized by inflation of prices. They provide important evidence that deflation is not harmful. However, they found that Canadian output (real GDP/capita) grew at an anemic 1 percent during the deflation period, but by a robust 4.3 percent in the post-1896 inflationary period. This finding is their "teaser" for which they do not provide an explanation, thus leaving the door open to inflationary policies inspired by the Phillips Curve.

The empirical analysis in their paper begins with the identification of supply shocks, money supply shocks, and demand shocks using a Blanchard-Quah methodology. They model the economy as a small open economy on an international gold standard using assumptions of how various shocks will impact national output and the price level in the long run. This allows them to separate or "decompose" how each shock impacts money, prices, and output. Their model predicts that an unanticipated increase in the supply of money, or "shock," will increase money, prices, and output. If money is truly neutral there would be no impact on output in the long run. Positive supply shocks increase both output and money in the long run, while the effects of demand shocks are largely neutral or indeterminate.

In their estimates for the U.S., they find a series of negative monetary shocks in the early 1890s followed by a series of positive monetary shocks and several negative demand shocks in the decade before 1913. For the U.S., their results are very clear and consistent–supply shocks determine most of the economic growth, demand shocks had far less impact on economic growth, and monetary shocks impacted the price level, not economic growth.[2]

In Canada, supply shocks had their impact on economic growth and on the stock of money. Demand shocks also affected the money stock, but had only small transitory impacts on the price level and economic growth. Their "surprising result" was the "persistent positive effect on output from a positive money supply shock" (Bordo and Redish 2003, p. 12). Moreover, in the first two decades of the period there was a stagnant gold supply, deflation of prices and slow economic growth in both the U.S. and Canada, while the latter two decades were characterized by gold discoveries, inflation of prices, and higher levels of economic growth. Therefore, the authors ask:

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[1]Williamson's (1974) was a "real" approach rather than one focused on monetary factors.

[2]It should be noted that the nature of shocks, their effects, and the source and persistence of those effects is not an incontrovertible subject. For example, in the traditional Keynesian view, fluctuations tend to be demand driven, while in real business cycle theory supply shocks explain real output fluctuations.

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> Was there a direct connection? Did monetary forces generate the bust and boom? We find that the connection was more coincidence than causation. . . . An open question that our analysis has raised is the apparent non-neutrality of the money shocks in Canada, and why the Canadian responses are so different from those in the U.S. (Bordo and Redish 2003, pp. 13-14)

Several possible explanations were raised by Bordo and Redish. For example, the U.S. and Canada had different banking systems, with Canada following a branch banking system and lower reserve ratios, while the U.S. had more unit banking and relatively higher reserve ratios. Second, the debt-deflation "story" of Irving Fisher (and modern deflation doomsayers) may have negatively affected the early period but was absent from the latter period. Finally, there was the "wheat boom" and large migrations and capital flows into Canada in the latter period. However, none of these suggestions seems to clearly or completely explain the surprising result of rapid economic growth in Canada and the authors are forced to conclude that further research will be necessary.

Klondike Inflation

The most obvious cause for the surprising result in the Canadian data—that of monetary-output shocks—was the Klondike gold discovery; an event mentioned, but not exploited, by the authors themselves (Bordo and Redish 2003, p. 5). A gold discovery meant that the economy would be "shocked" by an increase in the supply of money, but it would also entail an increase in economic output and therefore show up in GDP statistics. The Klondike Gold Rush, a noteworthy event in Canadian history, could therefore explain the "teaser" and reinforce the authors' judgment that deflation is not bad for the economy, and remove the suggestion that "positive monetary shocks," especially of the paper variety, might be good for the economy.

Mining was a leading factor in Canadian economic growth around the turn of the century. As two economic historians of Canada observed:

> Total output [in mining] doubled between 1886 and 1895, from $10 million to $20 million, trebled again in the next five years, and then doubled again by 1913. During the boom years after 1897 it was minerals, especially in British Columbia, and not agriculture or manufacturing, that attracted the bulk of British investment in Canada. (Norrie and Owram 1996, p. 260)

In 1896 gold was discovered in the Yukon Territory of Canada, igniting the Klondike gold rush. At first it was the local population of natives, prospectors, and fur traders that exploited the discovery, but after the first steamship arrived in San Francisco with a substantial gold export the following year, the rush of immigrant prospectors began in earnest. Soon more than a million dollars of gold was being produced each month and by 1898 Dawson was considered to be the most cosmopolitan Canadian city west of Winnipeg with a population of 30,000 (Norrie and Owram, p. 262). By 1900 gold production in Klondike peaked at $22 million and gold extraction started in earnest in nearby Alaska.

> Metallic minerals are the main story of this period, in terms of economic importance as well as of political excitement. Gold is far and away the most spectacular of the lot. . . . The next phase of the gold industry was more spectacular yet. News that gold of immense value had been found on the Klondike River brought miners from around the world to this isolated and inhospitable area. Success was immediate, for some at least, and gold production soared. (Norrie and Owram, p. 262)

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Could this gold rush really explain the anomaly posed by Bordo and Redish? After all, it was far from the world's largest gold discovery and the world was on the international gold standard, so that gold "would seek its own level" and be dispersed throughout the world. How could money be neutral in a general case, and yet be positive in this special case, especially when the weight of theory, opinion, and evidence so clearly indicates that it (inflation) can have a negative impact on economic growth?

The Klondike can explain this anomaly because the gold rush represented new economic output. The gold and gold bars extracted from the Klondike territory were tangible economic goods even though most of them were destined for export and used as money. Money is a commodity, although unlike paper money, gold is a commodity money with a well-established monetary value and numerous nonmonetary uses.

The gold rush in the Klondike was small by some standards, but large relative to Canadian standards, which had a small, widely dispersed population of approximately five million people. The Canadian economy was largely agricultural in occupation and had a lower per capita income than in the U.S.[3] The gold rush was also immense by western Canadian standards which had a predominately subsistence economy and very small population. Western Canada had few towns and settlements and an economy that depended largely on hunting, trapping, farming, and fishing. The Klondike helped establish the mining industry and attracted the foreign capital investment that continued to exploit opportunities throughout Canada long after the gold rush.

> Similarly, the silver and gold booms in northern Ontario, centering in Cobalt and Porcupine, attracted American attention because they were the most dynamic mining areas in North America in the 1906-14 period. Most spectacular in this regard was the impact of the Klondike which for its few historical moments held center stage. (Marr and Paterson 1980, p. 292)

The gold rush permitted the monetization of the western Canadian economy, distant from its eastern cities, where the native population had traditionally been subsistence producers and limited traders. The population in western Canada consisted mainly of farmers, fur trappers, hunters, and fishermen who had limited access to cash and formal types of credit. The Klondike and other gold discoveries helped monetize these local economies, a key ingredient in economic development. As Canadian economic historian, Harold Innis noted "Gold mining introduced an advanced state of monetary organization which accentuated flexibility in the specialization of production" (Innis 1956, p. 330). Trends in Canadian money supply confirm that there was an upward shift in the money holdings beginning with the Klondike (Metcalf, Redish, and Shearer 1998, p. 105).

Monetary development went hand in hand with all forms of economic development. The gold miners increased the population, brought capital with them, and as their income grew, so did their desire for goods, services, and more advanced implements of their trade. The gold rush would also be expected to drive up wage rates and rents across much of the economy. Ancillary industries in timber, shipbuilding, and coal were also started in the gold rush territories as a result of the rush for gold and the Klondike even hastened the building of additional transcontinental railroads

[3]Canadian GNP statistics indicate that mining experienced the largest percentage increase between 1895 and 1900. Mining output increased by 218 percent, while GNP (at market prices) increased by less than 43 percent, and contributed more than 12 percent of the economic growth that occurred during the period. Even this greatly understates the impact of mining because, to take one issue, gold prices were in a sense "fixed" while that of all other goods experienced high rates of relative price inflation (Urquhart 1993, p. 13).

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(Innis 1956, pp. 245, 314). Trading posts, settlements, and buildings were established. Yes, much of the gold production was exported, but much of these exports were counterbalanced by a flow of imports that constituted a large spectrum of consumer and capital goods. Gold discoveries in nearby Alaska did quickly dampen the Klondike gold rush but the overall effect was to increase the region's population, economy, communication and trade with the outside world. Also, other metals were discovered and exploited in the region after the initial rush was over (Dow 1985, p. 213). This was clearly a "golden age" for the Klondike, the Yukon Territory, and western Canada and a textbook case of Rostow's "take-off" stage of sustained economic growth (Rostow 1960).

Conclusion

In an age when deflation is widely feared and the threat of deflation serves as a justification for radical policy proposals, Bordo and Redish have done a great service in showing that deflation is not harmful to the economy, at least on the gold standard. However, they find an anomaly–a teaser–in Canada during the latter stage of the classical gold standard where positive monetary shocks led to positive shocks of increased economic output.

Naturally, given that the first half of the overall period was one of deflation and the second half was inflation, one is immediately suspicious that other factors are at work. Other possible causes of this anomaly, such as differences in banking between the U.S. and Canada, the "wheat boom," and large increases in migration and foreign capital, have failed to satisfy economic historians, but each must be treated as a potential contributor to economic growth.

The Klondike gold rush is offered here as the explanation for Bordo and Redish's "surprising result." All of the other factors (i.e., significant increases in land, labor, and capital) were no doubt important contributors to higher rates of economic growth, but it is the Klondike gold rush, along with other gold discoveries in the U.S. and Canada that explains the anomaly. The gold rush had both a monetary effect (higher price level and cash balances) and a real effect (increased production and higher returns to labor and capital). Both are clearly driven by the gold rush phenomenon and its various impacts on markets and thus Klondike's bars of gold were the important catalyst to the Golden 90s in Canada. The positive monetary shocks and the positive output shocks, in Bordo and Redish's "decomposition" were essentially the same thing.

Ironically, both the teaser and its solution may rest with the same theoretical apparatus–the international gold exchange mechanism. Economies with excess supplies of gold tend to experience higher prices and trade deficits in goods, while economies with excess demands for money tend to experience lower prices and trade surpluses. This process, first discovered by Richard Cantillon and latter by David Hume, demonstrates that money, prices and trade in goods tend to balance or equilibrate between economies over time. The Bordo and Redish anomaly would seem to rest on the notion that this mechanism is always at or near equilibrium, while the solution recognizes that the mechanism is a time-consuming process subject to new shocks over time. Therefore, it would seem that even the pre-classical economists still have something to teach us about the modern economy.

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THE CASE FOR GOLD

NIKOLAY GERTCHEV

This three-volume collection, edited by William Rees-Mogg and published in 2002 by Pickering and Chatto presents, in more than 949 pages, essays and excerpts from books written by 19 of the most remarkable monetary theorists from the sixteenth century to the present. Sir Rees-Mogg's selection begins with Malynes's "Treatise of the Canker of England's Commonwealth," includes works by most of the English classical liberals as well as by George Goschen, Stanley Jevons, Carl Menger, Ludwig von Mises, and Murray Rothbard among others, and closes the *Case for Gold*[1] with an interview, dated 1965, with the French economist Jacques Rueff. Contrary to the belief inspired by the title, only two of the texts, both written by twentieth-century authors, deal exclusively with the question why gold, rather than paper, should be the money of a free society aiming at peaceful progress. The temptation is huge, therefore, to acquire only the third volume, the texts being arranged chronologically. However, this would be a great mistake, because earlier economists do provide valuable arguments for commodity money, and much more. We will try to systemize the gist of these arguments and to present some inconsistencies in the classical-liberal thought, which may be used in support of paper money.

THE CASE FOR COMMODITY MONEY

It should first be noted that before the twentieth century money was, in large part, a metallic substance; paper was merely one form of bank credit, and it was generally convertible at will into money, save for extraordinary situations of suspension of redemption or particular historical developments, as in the case of late nineteenth century Austria, Russia, and India. John Stuart Mill clearly expresses this state of affairs, predominant in his time, when he asserts "These notes, therefore, perform all the functions of currency, and render an equivalent amount of money which was previously in circulation, unnecessary" (II, p. 136).

In these circumstances, economists did not have to justify why gold, or silver, or another metal, *should* be money, because it *was* money. Instead they endeavored to explain why these substances had been, and were actually, monies and what were the effects of bank credit, which they considered similar to, but distinct from, money. It does not mean, as it will soon become apparent, that the disastrous consequences of adopting fiat paper money remained unforeseen. Three main arguments in favor of commodity money, or rather against paper currency, may be identified.

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[1]Cato Institute published the minority report of the U.S. Gold Commission, authored by Ron Paul and Lewis Lehrman, in 1982 under the same title.

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The Value Argument

The general case for commodity money rests on the evident truth that in order to fulfill the various functions of money, a thing must possess value.[2] And because metals do have value, and a note of paper does not, it is then natural for a metal, which is also endowed with a number of other qualities like being divisible, portable, recognizable, etc.[3] to be the money. Locke makes the case crystal-clear:

> Now money is necessary to all these sorts of men, as serving both for counters and for pledges, and so carrying with it even reckoning, and security, that he, that receives it, shall have the same value for it again, of other things that he wants, whenever he pleases. The one of these it does by its stamp and denomination; the other by its intrinsic value, which is its quantity. (I, p. 33)

> A law cannot give to bills that intrinsic value, which the universal consent of mankind has annexed to silver and gold. (I, p. 34)

With the marginal revolution in value theory, the content of the argument has changed, but its essence remains unshaken, as evidenced by Jevons's following statement: "Since money has to be exchanged for valuable goods, it should itself possess value, and it must therefore have utility as the basis of value" (II, p. 207).

It is true that a promissory note, or any form of bank credit, provides the same services as money does, but the explanation for this lies in the representative-of-money nature of the note, which, otherwise, would never be accepted in exchanges. The total consensus, on this point, among economists is astonishing. Malthus substantiates his own position by quoting Huskisson:

> Mr. Huskisson further states, that paper currency is so much circulating credit, that "whoever buys, gives such a quantity of pure gold, as is equivalent to the article bought or sold: or if he gives or receives paper instead of money, he gives or receives that which is valuable only as it stipulates the payment of a given quantity of gold or silver . . . that money alone is the universal equivalent; paper currency the representative of that money." (II, p. 37)

Ricardo elaborates, so to speak, the normative version of the same principled idea: "I should shew what is the standard measure of value in this country, and of which, therefore, our paper currency ought to be the representative" (II, p. 66).[4] He

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[2]This line of argumentation is also that used by Benjamin Anderson in his famous criticism of the quantity theory of money. Although he first deems untenable "the notion that the money function alone can make an otherwise valueless money circulate," he concedes, "there need not be a physical commodity as the basis of the money" (Anderson 2000, p. 125). Anderson defends this awkward position on the basis of his theory of economic value, according to which "the value quality . . . is a complex of many individual mental activities, highly institutionalized, and including legal and moral values, hopes and beliefs and expectations, as well as the immediate intensities of men's wants for consumption goods" (p. 35). Nevertheless, even if conceded for the sake of argument that value is independent of the physical world, we do not see how a valued thing which is to become generally exchangeable may not be part of the physical world.

[3]Beauty too is emphatically mentioned by Jevons (II, p. 216) and Wicksell (III, p. 108).

[4]In his *History of Monetary and Credit Theory* (Rist 1966, pp. 140-49), which parenthetically analyzes brilliantly most of the texts included in this collection, Charles Rist accuses the English classical liberals, and in particular Ricardo, of falsly identifying bank notes and paper money (the original French text reads "L'identification, par Ricardo, du billet de banque [bank notes], du papier-monnaie [paper money] et de la monnaie métallique [metallic money]" showing

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does not oppose paper currency *per se*, unless it represents no specie, and goes so far as to contend "a currency is in its most perfect state when it consists wholly of paper money, but of paper money of an equal value with the gold, which it professes to represent" (II, p. 92). Indeed, classical economists saw an important advantage in paper currency, namely that it permits society to save the precious metal, which "is a barren thing, and produces nothing," according to Locke (I, p. 43). Thus, Malthus emphasizes that every increased usage of specie is "a return to a less advanced period of civilization" (II, p. 41). Mill summarizes this in his statement "the substitution of paper for metallic currency is a national gain" (II, p. 162). However, this "national gain" is possible only because the redemption of paper in money is preserved, so that the value of the metallic currency is, so to speak, imputed to the paper, which thereby becomes currency. This is the idea underlying Ricardo's plan for reform of the Bank of England, "which should gradually decrease the amount of their notes in circulation until they shall have rendered the remainder of equal value with the coins which they represent" (II, p. 82).

We must acknowledge here an important fallacy in the classical position, which consists in the defense of commodity money while advocating its substitution by paper, not only in exchanges, but in the bank vaults too. The commodity is needed to confer value on the paper, but once this value imputation is established in individuals' minds, it is left to the bankers' to determine the necessary amount of metals to be kept so the redemption promise is not compromised. Ricardo's conception of the "perfect state of the currency" is indeed self-contradictory since, if put into reality, it amounts to reduction of the currency to a nonexisting commodity money in which no redemption would be possible at all, for want of specie in the bank coffers.

Under Mill's pen, the value argument for commodity money achieves its most accomplished shape. If the paper currency is convertible at will into specie, then its value springs from the cost of production of the commodity money. The case of an inconvertible paper is utterly different, since its quantity is not determined by any cost considerations:

> The quantity of a paper currency not convertible into the metals at the option of the holder, can be arbitrarily fixed; especially if the issuer is the sovereign power of the state. The value, therefore, of such a currency is entirely arbitrary. (II, pp. 155-56)

Thus, the choice between commodity and inconvertible paper is that between determined or undetermined exchange value of the money. On these grounds, the option for commodity money is indeed the only possible choice, since any money must possess a determined value. In the same line of reasoning, Mill opposes any further increase of paper beyond the quantity of metallic money it replaces because "this is but a form of robbery" (II, p. 162).[5]

Classical economists rejected inconvertible paper money from the very beginning, because they thought it was lacking the most important attribute a thing must

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thus an omission in the English translation). Although the clear-cut distinction between convertible and inconvertible paper, at least on the Island, does not appear before Mill, nothing supports the claim that "paper currency" for Ricardo means (inconvertible) paper money. We concede, nevertheless, that there is indeed identification between those three different media of exchange, but this identification springs from their identical effects on prices (cf. next section), not from a confusion of their economic nature.

[5]An important point is that Mill does not consider as robbery, but rather as a national gain, the disappearance of the metallic money from the bank vaults when substituted by paper. Rothbard consistently defends the contrary opinion, namely that the robbery begins at the moment even a portion of the metallic money exits the bank (III, pp. 301-06).

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possess in order to provide the services of money, namely it was lacking value. In addition to this essentialist approach, and building their view upon a careful examination of the repercussions brought about by an increase of the stock of media of exchange in the economy, they developed an equally convincing set of arguments against any augmentation of paper currency, convertible as well as inconvertible.

The Consequentialist Argument

Prior to the analysis of the consequences driven by an increase of the stock of media of exchange is the very important, and quasi generally accepted, classical consideration that the given quantity of money is immaterial for the functioning of the economy. Hume is quite explicit when he states that "the absolute quantity of the precious metals is a matter of great indifference" (I, p. 121). Indeed, there is no optimum quantity of money which, when attained, makes the medium of exchange provide its services in the best way, as stated by Ricardo: "The smaller quantity of money would perform the functions of a circulating medium, as well as the larger" (II, p. 60).

Mill expresses the same idea, contending "there cannot, in short, be intrinsically a more insignificant thing, in the economy of society, than money" (II, p. 107). However, this principle that the quantity of money is of no importance whatsoever for the real well-being of individuals is not derived from some mechanical application of the quantity theory of money; it relies on the fundamental insight that money is not a capital good, and that therefore its quantity is not related to the final produce of the economy in whatever manner. Ricardo substantiates his own position on this question by highlighting Smith's observation that "money is neither a material to work upon, neither a tool to work with" (II, p. 79). Similarly, Mill extends the same argument to the case of credit, and thus to paper currency, which "being only permission to use the capital of another person, the means of production cannot be increased by it, but only transferred" (II, p. 128).

This fundamental part of the classical thought being presented, the primary, and most important consequence of an additional quantity of media of exchange, to which all the authors pay the greatest heed, is the subsequent rising of prices.[6] And because rising prices produce a series of detrimental effects on the economy, those should not be engineered artificially by more paper.

Following Hume, because paper currency makes things dearer, it hinders commerce, especially with foreigners who "will never accept" the "counterfeit money" (I, p. 114). The conclusion is then immediate, "it must be allow'd, that no bank cou'd be more advantageous than such a one as lockt up all the money it receiv'd, and never augmented the circulating coin, as is usual, by returning part of its treasure into commerce" (I, p. 115). Let us note also the idea, enunciated by Cantillon (I, p. 160) and Ricardo (II, p. 73) too, that paper currency, unlike commodity money, is of a serviceability limited to a narrow range of nationals, thus making it unsuitable for commerce with foreigners, thereby banishing the money from the country and restricting the benefits from a larger division of labor. And Hume continues, stating that great undertakings can be done conveniently only in specie, not in paper (I, p. 119).

For Ricardo, because paper currency arbitrarily depreciates the medium of exchange, which is to say that it distorts prices, the "equitable state" of the currency must be restored, if necessary even by "the total overthrow of our paper credit" (II, p. 82). Ricardo points out another harmful consequence of the depreciative power

[6]The strict version of the quantity theory of money, espoused by Locke (I, pp. 53 and 67) and Mill, stipulates that an increase in the stock of money provokes a precisely proportional loss in its exchange value, which, according to Mill, is a "property peculiar to money" (II, p. 113). Neither Hume, nor Cantillon put the accent on the "same proportion," although Hume once uses the phrase (I, p. 133).

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embodied in the paper currency, namely that it introduces an uncertainty as to the future interest on public and private debts, potentially paid in a money of a lower exchange value (II, p. 83).

Thus, the instability and unpredictability of the future purchasing power embodied in paper currency, emphasized by most of the authors and in particular by Goschen (II, p. 176) and Robertson (III, p. 181), is derived as a consequence from the economic law that more credit in general, and more paper in particular, necessarily heightens prices. And Mill already warns that there is no limit to the depreciation of an inconvertible currency, when he affirms that "The issuers may add to it indefinitely, lowering its value and raising prices in proportion; they may, in other words, depreciate the currency without limit" (II, p. 157).[7]

To sum up the consequentialist argument against paper currency, we must say that because the quantity of money in the economy is irrelevant, and since each increase of the stock of media of exchange produces harmful effects, the quantity of paper currency should not be increased beyond what was defined by Mill as "the national gain." Besides, the opposition to fiat paper money stems from the insight that in such a system the harmful effects are more likely to occur, since interested groups push its producer to abuse his power, and to issue more money at others' expense. The third argument for commodity money is an elaboration of this last point.

The Property Rights Argument

A thorough examination of the personal (or group) advantages enjoyed by a paper money issuer leads economists to emphasize that the monetary system which does not allow for arbitrary, and moreover systematic, political interferences with the market economy is that of a commodity money.[8] Eighteenth and nineteenth century economists have already warned against the possibility, offered by paper currency, to privilege the particular interests of one special group and hurt those of others. That an additional issue of paper currency robs creditors is not in doubt for Locke (I, pp. 78-79). Examining the debtor's position, Cantillon alerts us that "a Banker with the complicity of a Minister is able to . . . pay off the State debt," by means of new bank notes (I, p. 182). The nineteenth century suspicion of those, and similar, corrupted practices must have been significant, for Malthus to express it so vividly: "In fact, what security have we, except in this integrity, that the Bank Directors may not agree to create and divide 24 millions in notes among them for their private fortunes?" (II, p. 44).

Malthus's greatest concern is caused by his awareness that a paper currency "which is not referable to any commodity of intrinsic worth for the correction of its quantity" may destroy contract engagements and individual fortunes (II, p. 43). Although the early classical economists rightly identified the power concentrated in the paper money issuer, they only partially recognized the institution that is most interested in capturing the opportunity to provide an economy with a medium of exchange. However, Ricardo and, especially Mill, do perceive that the state is the entity, which seizes this power and is most likely to abuse it. Observing that "experience, however, shows that neither a State nor a Bank ever have had the unrestricted power of issuing paper money, without abusing that power," Ricardo foresees the necessity for the public to be protected against "the indiscretion of the Bank" (II, pp. 83 and 91). Again, the only valid protection is a system of bank notes redeemable on demand in specie.

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[7]It should however be noted that, caught in his strict version of the quantity theory of money, Mill is unable to grasp the hyperinflationist phenomenon.

[8]Which is not to say that a state that finances itself exclusively through taxation, under a commodity standard, could not interfere with the market economy, by granting privileges for example. However, it could not do it in a systematic manner, since it would be lacking the security of its assured financing.

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Mill makes it clear that governments were those who first seized the opportunity to finance themselves through paper money, simply by "emancipating themselves" from the "unpleasant obligation" to redeem the bank notes in specie (II, p. 155), in other words, by breaking an established contract. And because governments will try to "pay off the national debt, defray the expenses of government without taxation" by the issue of inconvertible paper, Mill rejects this form of monetary organization (II, p. 159). Not only does he see that an issuer levies a tax "for his benefit" on the holders of currency through the depreciation of its value, but also points out that "the issuers may have, and in the case of government paper always have, a direct interest in lowering the value of the currency, because it is the medium in which their own debts are computed" (II, pp. 157, 163). Thus, Mill comes to the conclusion that a state issuing fiat paper money may be inclined to progressively inflate its quantity, but he does not grasp that "the natural tendency of the state is inflation," thereby omitting the systematic character of the abuse which Rothbard emphasizes so much (III, p. 298).

Indeed, Rothbard is the economist who unquestionably shows the fundamental reason why a centralized fiat money producer is enabled to systematically expropriate legitimate owners: "He [the producer of his own money] could consume without producing, and thus seize the output of the economy from the genuine producers" (III, p. 289).

This political seizure of others' property is rendered possible by a specific feature money possesses, which is to "assure control over every commodity to be had on the market," as Menger points out (III, p. 99). And because of this particularity—the control over this unique good assures the control over the whole of the market economy—its quantity should not be subject to the discretion of one producer,[9] and its physical substance should not facilitate its production, by making it costless or nearly so. A corollary is that a fiat paper money provides for an unlimited expansion of the state, and that a world of independent nation-states will be a world of independent fiat money producers. In this sense, and following Rueff, a gold exchange standard does thwart the growth of independent governments, but it does not prevent the rise of one internationally dominant state, that of "the key-currency country" which, because it "never feels the effect of a deficit in its balance of payments," can continue to expropriate foreigners (III, p. 324). Examining the same monetary system, Mises notes that a gold exchange standard is not a stable monetary regime, in the sense that sooner or later it evolves toward more interference with the market (III, p. 157). Thus, the choice between a commodity (gold) standard and any other mode of money production is indeed a choice between respect of property rights and institutionalized large-scale expropriation.[10]

The Roots of the Case for Paper Money

The same classical authors who defend a commodity standard express some additional very subtle thoughts, which provide the justification for the present-day government involvement in the production of money. That is not to say that the case for

[9]Note that the monopolistic production of commodity money does not create any particular danger for the owners of property rights. A monopolist will not be able to engage in the seizure of producers' and consumers' goods through money, provided that producing the medium of exchange is not less costly than engaging in any other production, monopolistic or not.

[10]In his 1931 article the "Gold Standard and Its Opponents," Mises is no less eloquent: "Tying the value of the currency to the value of gold erects a dam against all endeavors to benefit particular sectors of the population at the expense of other sectors through the use of monetary policy" (Ebeling 2002, p. 174).

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gold is invalid, but rather that the classical economists' thinking is more heterogeneous than is usually believed. The deviating positions are based on the two ideas that an increase of the quantity of money is beneficial for economic activity and that money carries on its function of the standard of value better when its quantity is administratively governed.

An Increase of the Stock of Money Does Matter

Hume considers that "the increasing quantity of gold and silver is favorable to industry," but he quickly adds that this is true only in the intermediate period between the increase of the stock of money and the consequent rise in prices, when an entrepreneur is able to attract additional labor and thus intensify its production (I, p. 116). The policy-oriented conclusion, which logically follows from this belief, is explicitly stated: "The good policy of the magistrate consists only in keeping it [the quantity of money], if possible, still encreasing; because, by that means, he keeps a spirit of industry alive in the nation, and encreases the stock of labor, wherein consists all real power and riches" (I, p. 117).

The only way to put into practice this advice, of course, is to endow the magistrate with the power to produce money, in fact paper money. There is no particular problem in Hume's line of reasoning, except for the false generalization that the new money "must first quicken the diligence of *every* individual" (I, p. 116, emphasis added). Given the sequential manner in which the new money enters the economy, which Hume describes perfectly well, it is evident that the attraction of factors of production by one entrepreneur prevents another entrepreneur from fulfilling his project, which means that there can be no general advantage in an increase of the quantity of money. Hume's argument would be valid only if there were unemployed factors of production in the economy, and their owners agreed to sell or rent them not because of a higher remuneration. After all, people are aware of the imminent rise in prices—but simply because there is more money in the economy. In short, psychology alone helps to quicken the economy, and it does not require further developments to prove that things may not happen in this, but rather in the opposite, way.

Other economists, like Malthus and Mill, favored an increase in the stock of the currency, because they saw in this operation a method for stimulating capital accumulation in the economy. Announcing the doctrine of forced savings, Malthus points out "that it is not the *quantity* of the circulating medium which produces the effect here described [an increase of the national capital], but the *different distribution* of it" (II, p. 49). What he advocates is "such a distribution of the circulating medium . . . as to throw the command of the produce of the country chiefly into the hands of the productive classes" in order to alter the proportion between capital and revenue, as defined by Smith, to the advantage of capital. Without any justification, Malthus claims that those effects are "similar but comparatively inconsiderable" if attempted by an increase of the stock of bank notes. Mill corrects this weakness and substantiates virtually the same doctrine in the following terms:

> The additional bank notes are, in ordinary course, first issued to producers or dealers, to be employed as capital; and though the stock of commodities in the country is no greater than before, yet as a greater share of that stock now comes by purchase into the hands of producers and dealers, to that extent what would have been unproductively consumed is applied to production, and there is a real increase in capital. (II, p. 129)

It is clear from those quotations that classical economists identified neither money nor circulation credit as capital; what they claimed is that increasing the quantity of media of exchange produces the conditions for a subsequent rise in savings, and therefore in the future stock of real capital. The version of the forced savings doctrine they

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presented remains by and large mechanical, not very convincing, and easily contestable.[11] Contrary to what classical economists' ideas imply, the choice is not between a situation with given quantities of money and capital and a situation with higher quantities of both. In fact, individuals have to decide whether, given the additional stock of money, they prefer to lower their present-day consumption in order to invest more goods and thus obtain more commodities in the future. Neither Malthus nor Mill demonstrated how increasing the stock of money modifies individuals' intertemporal consumption choices in this direction.

The complete classical position, then, appears to be exceptionally subtle. The absolute quantity of money does not matter, but increases of this quantity do matter. Indeed, this is a rather delicate statement, inviting the sovereign to practice inflationism, which is only possible, of course, if he is printing his own money. But one cannot claim that the quantity of money is irrelevant while showing the virtues, for the whole of the economy, of a still bigger stock of money without provoking suspicion about the consistency of his position.

The Stability of Money Exchange Value

Classical economists, inspired by the idea that money must conserve value and be a standard of value, initiated the quest for a medium of exchange whose exchange value is, if not constant, at least stable. Mill calls a "great evil" any alteration in the value of money: "All variations in the value of the circulating medium are mischievous: they disturb existing contracts and expectations, and the liability to such changes renders every pecuniary engagement of long date entirely precarious" (II, p. 157).

Although Mill adds that these variations may be greater in the case of inconvertible money, his statement can be used, by any government, as a justification for starting to print its own money, presumably with a more stable value than gold. Central bankers may even claim that they provide extremely useful services to the community, like protecting the future value of the contracts and decreasing the uncertainty of the future. Legal conflicts are thus reduced, and for Wicksell this is one of the most important advantages of the overthrow of the commodity standard. He considers that the inconstancy of the exchange value of gold is an extremely important problem, and suggests, that a solution could not be found "so long as metals are used as standards of value and free minting of the standard money on private account is permitted" (III, p. 129).

These conclusions also provide a rationale for designing and implementing different plans, like those of Irving Fisher or Henry Simons, all aiming at improving the quality of the medium of exchange.[12] One merit of the collection is that it contains an excerpt from the *Theory of Money and Credit* where Mises convincingly demonstrates the futility of such intellectually flawed constructs. Mises first questions the legitimacy of the quest for the "unattainable ideal of a money with an invariable objective exchange value," and acknowledges no practical problem. In addition, he exposes

[11]Mises gives a more economically developed, not to say plausible, presentation, putting the emphasis on changes in individuals' behavior after the additional money has modified their incomes (Mises 1998, pp. 545-47). Mises acknowledges that inflation may lead to an increased capital accumulation, but he emphasizes, that there is no necessity for this effect to occur, since psychology, and not praxeological laws, governs these causal processes. In addition, he remarks that inflation contains, too, some capital consuming tendencies and that the final outcome is more than uncertain.

[12]Other famous plans include Benjamin Graham and Frank Graham's proposal for the adoption of a commodity reserve currency and James Buchanan's popularization of Hardy's idea for a common-brick monetary standard. Cf. Yeager (1962, pp. 155-218).

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the theoretical deficiencies in Fisher's plan for correcting this supposed imperfection in defense of his statement that money necessarily has a variable exchange value, if property rights are to be physically protected (III, pp. 155-71).[13] Thus, even though the gold standard does not satisfy this, and possibly many other requirements theoreticians may formulate in their abstract definitions of the perfect money, it remains the most efficient monetary system for all real-world situations.[14]

As a matter of fact, present-day governmental involvement in money production is based either on the belief that increasing the stock of money is good for the community, and therefore *targets* should be aimed at, or on the equally false belief that money's exchange value is to be stabilized, and therefore *rules* should be observed in the production of the media of exchange.[15] There could be no doubt for the reader of this collection that central banking and fiat paper money find both their *raison d'être* in the writings of those same classical economists who actively support the gold standard.

Beyond the Commodity-Standard Debate

The commodity versus paper currency debate is only one of the themes in this collection. The authors address practically all of the fundamental questions in monetary economics, and this is certainly a common feature of what was considered good economic writing in past centuries. To give the reader a general picture of what can hardly be accounted for here in any detail, the texts explore the role of money in the economy, its optimum quantity, the balance of payments and the formation of exchange rates, the relation between money and capital, the relation between money and interest rates, the connection between money and prices, the quantity theory of money, central banking, etc.

Present-day economists may disagree, sometimes on scientific grounds, with some of the authors, but there is one invaluable lesson they can learn, or recall, from this collection. And this is how economists conceived of and practiced their profession. Two striking features of all texts are their policy-orientation and their freedom from technical formalism. It is not to say that advice and criticism of the sovereign were arbitrary or self-interested. On the contrary, every policy advice was given on the basis of general economic principles, scrupulously discovered in the course of the analysis. As a matter of fact, economists placed the greatest importance precisely on the discovery of those principles, because they were convinced that no advice could be valid before the problem had been fully and truly grasped. Unquestionably, this quest for the greatest possible understanding accounts for the variety of themes the

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[13]Each plan for the protection of the value, rather than the physical shape, of a thing in general, and of money in particular, is necessarily in contradiction with the "natural rights" theory and morally indefensible. Cf. Hoppe (1988a, pp. 127-44).

[14]In an article from 1924 entitled the *Return to the Gold Standard*, Mises acknowledges that gold is not the perfect money one would like to have, but reminds the reader that the only alternative to gold is governmental currency.

> We have only the choice between the gold standard and a currency manipulated by governments. With the gold standard we are dependent upon the accidents of the profitability of gold production; with an independent currency we are dependent upon the changing political currents. . . . The gold standard is not an ideal monetary system, but in the given circumstances it is the best one possible. (Ebeling 2002, p. 153)

[15]Incidentally, this philosophy receives the approval of all those who believe that capitalism is somehow anarchic and hostile to rules.

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authors tackled and the absence of technical formalization. By the same token, one cannot find theorizing for the sake of theorizing, but only in response to a real-life problem. Economics is a science, and a science about reality (though this is sometimes contested today). This collection manages to convey this crucial idea, and for this too it deserves to be read.

The Collection Itself

It is beyond a doubt that the collection is precious, but the question arises whether this, mostly excerpt style of presentation, adds anything to the autonomously brilliant pieces. None of the pieces are given individual introductions, explanatory and/or bibliographical notes to, or a synthesis of the arguments advanced in defense of gold. Thus, the reader is offered significantly less than he can get from reading the corresponding complete works. This is not to say the collection is useless. But because of its anthological format, and being chiefly composed of excerpts, its natural public is that of students and economists specializing in other fields. And these readers are likely to appreciate some additional material on the authors and their works.

That is also what is lacking in the 10-and-a-half-page introduction. To be sure, introducing 20 or so masterpieces, within a limited space, is a difficult task. However, this does not mean that the introduction should not at least try to give a flavor of the chosen pieces. Articulated around the Jevonsian four-functions approach to money, and the Fisherian $mv = pt$ theory, by which "both gold-based and paper currencies are governed," Sir William Rees-Mogg's introduction prepares the reader for an intellectual framework which will not be found in the volumes (I, p. xvi). His introduction leaves the reader with the impression that, due to problems with defining, calculating, predicting and stabilizing the stock of money, the quantity theory of money applies somehow better in the case of the gold standard than under a paper currency, and that this is why gold is superior money. Those problems may be important, but they are certainly only a consequence of the much more general principles which lead sound economics to make the case for commodity money. Those principles, the core of the selected essays, are almost neglected in the introduction. Thus, failing to make a case of principle for gold, Sir Rees-Mogg does not surprise the reader with his last sentence: "An automatic gold standard has its own problems, but gold remains the money of last resort" (I, p. xix). What are those problems left unstated in the introduction? And if someone is really convinced that gold is superior to present-day fiat monies, should he not urge an active effort for change, rather than limit himself to admire gold as money of last resort?

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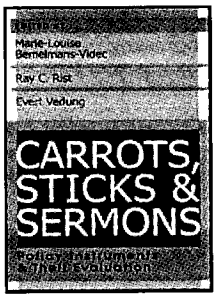

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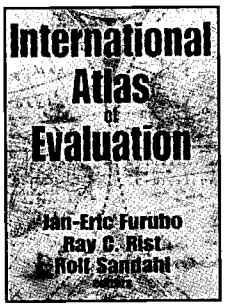

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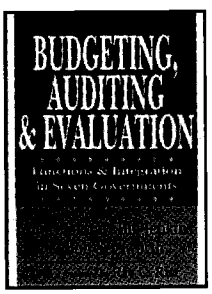

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